Fisheries Management for Sustainable Livelihoods (FIMSUL)

Work Package 1&3
Report - R 2

Fisheries Stakeholders and their Livelihoods in Tamil Nadu and Puducherry

Government of Tamil Nadu

सत्यमेव जयते
Government of Puducherry

Food and Agriculture Organization of the United Nations

The World Bank

Cover photograph : Landing centre, Pamban, Rameshwaram. Photo courtesy Philip Townsley/ FIMSUL

FISHERIES MANAGEMENT FOR SUSTAINABLE LIVELIHOODS (FIMSUL) PROJECT IN TAMIL NADU AND PUDUCHERRY, INDIA (FAO/UTF/IND/180/IND)

Work-Package 1 & 3

Stakeholder Analysis and Visioning
Livelihood Support and Best Practice Interventions

FISHERIES STAKEHOLDERS AND THEIR LIVELIHOODS IN TAMIL NADU AND PUDUCHERRY

AUTHORS

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PREFACE

Fisheries Management for Sustainable Livelihoods (FIMSUL), is a project implemented by the Food and Agriculture Organization of the United Nations (FAO) with the Government of Tamil Nadu and Puducherry in India under the World Bank Trust Fund.

The project aims at establishing frameworks, processes and building capacities of various stakeholders especially the Government, to facilitate the planning, design and implementation of appropriate fisheries development and management policies.

The project includes a series of stakeholder consultations and consensus building apart from detailed review and analysis in the areas of stakeholders, livelihoods, policy, legal and institutional frame work and fisheries management. Based on this, the project comes up with various options.

Stakeholder and livelihoods analysis is an essential part of the project. Hence, the team developed a detailed methodology for stakeholder consultations which includes district level stake holder consultation, focus group discussions, household interviews and validation meetings. The stakeholder and livelihoods analysis following the above steps were done through six NGO partners working along the coast of Tamil Nadu and Puducherry who were initially trained on the methodology. The NGO partners : PLANT, GUIDE, FERAL, SIFFS, DHAN Foundation and TMSSS, especially a team of dedicated staff engaged by them had done an excellent work in completing comprehensive field exercises and bringing out 12 district/ regional reports. These are published separately. This report is a compilation, and complete analysis of the stake holders and livelihoods based on all the field level consultations.

This report is expected to be an important reference to primary stakeholders' perspective of the important stakeholders in the sector, the livelihoods and livelihoods changes, the adaptive and coping mechanism, the relationships between the stakeholders and their hopes and aspirations. For any development intervention for any sector or stakeholder group, region-wise in marine fisheries in Tamil Nadu and Puducherry, the information from this report could be an important starting point.

The FIMSUL team thanks the NGO partners PLANT, GUIDE, FERAL, SIFFS, DHAN Foundation and TMSSS and especially the field teams set up by them for the hard work. The FIMSUL team thanks the successive Secretaries and Director/ Commissioners of Fisheries in Tamil Nadu and Puducherry during the project period for all the support provided. The support of the Department of Fisheries officers from Tamil Nadu and Puducherry is acknowledged with thanks. The participation and contribution of the fisher stakeholders and other institutions in the consultations was invaluable and all are thanked for their immense support.I thank Dr. Ahana Lakshmi for editing the report.

Special thanks are due to Mr. Rolf Willmann, Senior Fisheries Planning officer, FAO, Rome, the lead technical officer for the project for his constant guidance and support. The team thanks Mr. Gavin Wall, FAO representative for India, Ms. Renuka Taimni and other officers from FAOR office New Delhi for all support.

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The FIMSUL team would like to acknowledge the collaboration and support of the Fisheries Departments of Tamil Nadu and the Union Territory of Puducherry, as well the collaboration, hard work and understanding of the NGO partners involved in implementing the work reported here.

The NGOs involved in each area and their respective team members who implemented work and documented the outputs were as follows:

Districts covered	Partner Organisation	Full title and base	Key staff members involved in the work
Tiruvallur Chennai	PLANT	Participatory Learning Action Network and Training, Chennai	• John Suresh • Amul Rani • Anto Asirvatham • E. Raja • Prabhakaran
Kancheepuram Viluppuram	GUIDE	Gandhian Unit for Integrated Development Education, Chengalpattu	• Gilbert Rodrigo • D. Sasikala • R. Kanniappan • Savitha
Puducherry Cuddalore	FERAL	Foundation for Ecological Research, Advocacy and Learning, Puducherry	• Benjamin Laroquette • Ravi Bhalla • Senthil Babu • S. Saravanan • Gespard • Kumaran • Selvi
Nagapattinam Karaikal Tiruvarur Thanjavur	SIFFS	South Indian Federation of Fishermen Societies, Thiruvananthapuram	• Ephrem • Sahaya Raj • S. Baskar • J. Vincent Jain • R. Karthikeyan • John Swamy
Pudukottai Ramanathapuram	DHAN Foundation	Development of Humane Action (DHAN) Foundation, Madurai	• Singarayar • P. Rajan • M. Malairaj • G. Satheesh Kumar • Sarvanan
Thoothukudi[1] Tirunelveli	TMSSS	Thoothukudi Multipurpose Social Service Society, Thoothukudi	• Victo Lobo • J. Jones Thomas Sparlegus • J. Sahayaraj • Siluvai • Mithuna

[1] Tuticorin

Districts covered	Partner Organisation	Full title and base	Key staff members involved in the work
Kanyakumari	SIFFS	South Indian Federation of Fishermen Societies, Thiruvananthapuram	• Ephrem • Maria Das • S. Benjamin Franklin • B. Stephen • Sebastian Varma

FIMSUL's greatest debt of gratitude is with the almost 3,000 members of different fishing communities along the coasts of Tamil Nadu and Puducherry who gave their valuable time to participate in the district stake holder consultations, focus group discussions, individual household interviews and validation workshops; and by doing so, made by far the most important contribution to this study. It is hoped that the following report adequately reflects both their perceptions of the world they live in and the time and effort that they have contributed.

Staff from the Department of Fisheries of Tamil Nadu and the Department of Fisheries of the Union Territory of Puducherry were also closely involved in supporting the development and implementation of the Stakeholder and Livelihoods Analysis Process. These included Joint Directors of Fisheries at the respective headquarters of the two states, Regional Joint Directors, Regional Deputy Directors, Assistant Directors of Fisheries in the coastal districts where the field work was conducted, and the Fisheries Inspectors at the field level who assisted in the work with communities both by the FIMSUL team and the teams of FIMSUL's project partners. Our thanks go to them for their efforts in coordinating activities, providing advice and helping to make contacts with local partners and communities. Other regional NGOs and Institutions who participated in the consultations are also thanked for their valuable contributions.

Our thanks go to the successive secretaries and Directors of Fisheries in Tamil Nadu and Puducherry who have been a great support to the project. The support of the officers deputed to the project from Department of Fisheries is acknowledged with utmost gratitude. Dr. Ahana Lakshmi edited the report.

We thank Mr. Rolf Willmann, Senior Fisheries Planning officer, FAO, Rome and the lead technical officer for the project for his constant guidance and support. The team thanks Mr. Gavin Wall, FAO representative for India, Ms. Renuka Taimni and other officers from FAOR office New Delhi for all support.

EXECUTIVE SUMMARY

As part of the overall work programme for the FIMSUL project, a detailed understanding of the characteristics of the stakeholders in the fisheries sector was seen as central to the development of appropriate proposals for future action on fisheries management. Achieving such an understanding was clearly challenging given the length of coastline to be covered and the number and complexity of the stakeholder groups known to be involved in the sector.

Considerable work on the fishing community had already been conducted, especially in the wake of the tsunami disaster of 2004 and the subsequent rehabilitation efforts involving a wide range of governmental, civil society and international organisations. However, the majority of the analysis conducted in this context had focussed on specific areas where interventions were planned and there was a clear lack of a comprehensive analysis looking at the entire coastline. Such a global understanding of stakeholders in the sector and their livelihoods was clearly required in order to support policy, institutional and fisheries management proposals that are likely to affect all fisheries stakeholders in Tamil Nadu and Puducherry.

In addition to an analysis of stakeholders and their livelihoods, it was also recognised that any form of fisheries management in the future is likely to involve some changes in the livelihoods of stakeholders in the sector. Whatever the specific solutions for improved management of fisheries that are likely to emerge in the future, it is probable that they will involve some degree of limitation of access to fisheries by some stakeholders involved in the sector. It was therefore important, as part of the FIMSUL process, to identify appropriate ways in which the livelihoods of fisheries stakeholders could be supported most effectively in order to help them to respond to changes in their livelihoods in the future. Adaptive capacity among fisheries stakeholders was to be an important focus of the Stakeholder and Livelihoods Analysis Process undertaken by Work Packages 1 and 3 of the FIMSUL project, but an analysis of experience both in Tamil Nadu and more widely of different institutions in providing livelihoods support was also felt to be essential.

Objectives

The Stakeholder Analysis and the Livelihoods Analysis were originally envisaged as separate activities to be conducted sequentially and were divided across the two Work Packages. However, once the FIMSUL project was underway, it quickly became apparent that the two activities could effectively be combined so as to generate significant savings both in terms of project resources and time. As a result, the planning of the Stakeholder Analysis and the Livelihoods Analysis was undertaken as a single activity. The Visioning Process, originally placed under Work Package 1, made use of the outputs of the combined Stakeholder and Livelihoods Analysis Process and the consultative platform that this process built through its discussions with a wide range of stakeholders along the coasts of Tamil Nadu and Puducherry.

The review of Best Practice in Livelihoods Support was undertaken as a separate activity although this also drew on the experience of project partners working on livelihoods activities with fishing communities.

The overall objectives defined for the various elements of Work Packages 1 and 3 were as follows:

Objectives of the Stakeholder and Livelihoods Analysis Process :

1. To identify key stakeholder groups in the fisheries sectors in Tamil Nadu and Puducherry;
2. To analyse and understand the livelihoods of these different stakeholder groups and the key factors influencing their livelihood strategies;
3. To understand the adaptive capacities of different stakeholder groups in the face of change.

Objectives of the review of Best Practice in Livelihoods Support:

1. To define "best practice" in livelihoods support;
2. To identify and document cases of best practice in livelihoods support in Tamil Nadu and worldwide;
3. To develop policy options for incorporating this best practice into future programmes to build sustainable livelihoods through fisheries management in Tamil Nadu.

Approach and Methodology

Work Packages 1 and 3 have been made up of a series of inter-locking activities producing a complementary set of outputs. The work for Work Package 1: Stakeholder Analysis was combined with that of Work Package 3: Livelihoods Analysis as, particularly in terms of the activities to be conducted at the field level, there was considerable overlap between the two.

The work on Stakeholder and Livelihoods Analysis was carried out in close collaboration with a group of 6 project partners from the NGO sector. These partners were identified to work with FIMSUL based on their existing strong relationships with coastal communities in different parts of the coastline of Tamil Nadu and Puducherry and on their previous experience in conducting participatory research at the field level.

The central elements in the approach used for the Stakeholder and Livelihoods Analysis Process included:

- A series of multi-level discussions, at the District, District-level Key Informant, Stakeholder Focus Group and Household levels;
- The generation of "layers" of learning at each of these levels permitting teams to develop an in-depth understanding of the key characteristics of different stakeholder groups involved in fisheries and the nature and dynamics of the livelihoods;
- Open-ended discussions and interviews guided by checklists of key areas and topics. These encouraged stakeholder groups to **themselves** analyse the conditions they face and changes they have had to address and allowed these discussions to be recorded in an accessible format that could then be used by FIMSUL to generate a more generalised picture across the two states;
- A focus in discussions on the process of change in the fisheries sector, the factors driving that change and the capacity of fisheries stakeholders to adapt to change;
- The progressive engagement of wider groups of interested stakeholders in the discussions with a view to building a platform for active stakeholder participation in the subsequent Visioning Process.

Key Findings

Key findings generated through the stakeholder and livelihoods analysis process are reviewed below.

Awareness of an impending crisis in fisheries

Taking the widespread identification of declining fisheries resources, increasing competition for fish both at sea and at the landing site, and the desire for fishers' children to find employment outside fisheries in the future, there is clearly a perception among many fisheries stakeholders that the sector faces an imminent crisis.

Limited range of strategies for addressing this crisis.

Stakeholder strategies to address this perceived crisis are focused on coping with its impacts by adopting new fishing technologies and modes of operation which require more investment and higher costs leading to increased indebtedness, increasing pressure on resources and increasing competition.

Capacity to adapt to change is considerable

In spite of having relatively limited options for adaptation at their disposal, stakeholders in the sector are constantly demonstrating a considerable capacity to adapt with those means at their disposal. Fishers invest in new equipment, often learning how to use it "on-the-job" and through observation of others. Actors both at sea and in the post-harvest sector are learning to make use of new technology to be more competitive and are accepting far higher degrees of mobility in the way they operate – fishers go further off shore, fish vendors move to more distant markets both to purchase and to sell their fish.

Family, community and other informal networks provide important safety-nets

Support within the community, and through networks of family and friends, continue to play a key role in supporting those involved in the fisheries sector and their livelihoods. Fishers depend on their relationships with fish buyers, agents and money lenders, who are often also related to them; fish vendors and buyers depend on stable relationships with fishers in order to ensure access to fish to support their businesses in an increasingly competitive environment. More formal relationships, with institutions such as the Fisheries Department, are important in ensuring access to welfare payments but it is to these informal networks of family, friends and community that people turn for support in times of need.

Awareness of the range of possible management interventions is limited

Where management is considered an option, stakeholders are primarily aware of options to reduce effort – the banning or restriction of specific gears perceived as destructive by particular stakeholder groups, or the implementation of zoning arrangements. Some efforts to introduce management of fishing time have been deployed in some areas focusing on avoiding conflict rather than addressing underlying issues regarding fishing pressure.

Management of fisheries is largely seen as a responsibility of Government

If management is to be implemented, responsibility seems to be perceived as lying above all with government. The scale of the problems that stakeholders perceive in the sector seems to be regarded as precluding action by stakeholders themselves, at least in the short term. In considering future options, some stakeholders express the aspiration that the fishing community themselves would take more responsibility for regulating fishing activities.

Awareness of the need to address not just the issues within the sector but broader issues of coastal management

There is widespread recognition among fishers and fish workers that many of the issues that the sector faces, particularly with regards the health and sustainability of the fisheries resource, are not solely related to practices within the sector but are also linked to the broader health of the coastal and marine environment. Fisheries stakeholder perceive that there is a lack of appropriate channels for addressing the larger and more organised sets of interests that are driving these developments and that the fisheries sector is a in a relatively weak position in confronting these broader sets of interests because it is poorly represented, is not widely recognised as an "important" sector and has relatively little leverage in relation to sectors such as industry, tourism and power generation.

Organisation in the sector is developing but is still weak

While organisation, in the form of associations, sangams and other forms of social organisation is developing, it does not seem to have yet developed into a form that can fully articulate the diverse needs of different stakeholder groups in the sector. Above all, these forms of organisation largely seem to aim at representing the exclusive interests of their particular group of stakeholders rather than encouraging a broader concern for the health of the sector as a whole. There is, however, a considerable awareness of the importance of organisation among fisheries stakeholders. Better leadership, improved representation, and more cooperation within the fishing community through the formation of associations, sangams and Self-Help Groups was mentioned consistently by participants in FGDs as an important future development to be aspired to.

Leadership and institutional representation is perceived to be generally lacking

While traditional leaders within the fishing community are still respected and expected to play a role in resolving local conflicts and issues within their communities, they do not seem to offer particularly effective means of representing the broader interests of the fishing community as a whole. Their roles are perceived as being primarily to do with conflict resolution within and between fishing communities. However, they continue to play an important role in influencing opinion and behaviour in the fishing community.

Many stakeholders also note that fishing communities inevitably represent a relatively small part of constituencies and local administrative areas where other sectors and sets of interests are inevitably more dominant. Many stakeholders suggest that "coastal constituencies" be established as a means of promoting the interests of the fisheries sector and fishing communities and a separate ministry as a means of "protecting" the interests of the sector. This highlights the tendency of stakeholders in the sector to look "inwards" in seeking solutions to problems – to traditional, community-based institutions, to producer associations, to their Departments of Fisheries – rather than looking outwards at the wider opportunities available in the form of linkages with other government schemes in support of poverty alleviation, or opportunities offered by wider development in Tamil Nadu and Puducherry.

Stakeholders have difficulty in looking beyond the specific interests of their groups to those of the fisheries sector as a whole

An important obstacle in achieving consensus for more effective action for the sector is that most stakeholders tend to focus on their immediate interests, or those of their particular interest group, and seem reluctant to consider the broader interests of the fisheries sector as a whole. This can be taken, at least in part, as a result of the lack of effective representation of the sector as a whole and the focus on representation of specific interest groups. There is effectively, at present, no institutional figure that is in a position to present the longer-term interests of the sector as a whole. Political leadership is always likely to take a relatively short-term view in order to ensure support among a constituency or interest group within the sector. At the same time, the key institutions tasked with responsibility for the interests of the sector are in a relatively weak position to raise and address the key issues that stakeholders identify in relation to the overall sustainability of fisheries, largely because their de facto role is primarily to administer and deliver welfare schemes of one sort or another. Traditional institutions, such as the traditional panchayat have the potential for taking a longer view but they seem to be perceived as, above all, mechanisms for resolving conflicts within the fishing community and may lack the legitimacy to address wider issues that relate to the sector as a whole.

Definition of the "fishing community" is important

The sense of belonging to the "traditional fishing community", defined by caste, culture and recognition of certain shared values is important for those who identify themselves as members of this community. It also is increasingly important from a more practical point of view as identification as a member of the "fishing community" also defines relationships with institutions like the Department of Fisheries and access to a range of welfare payments and subsidies that are specifically set aside for the "fishing community". The extent to which current definitions of this community correspond to actual involvement in fisheries is not always clear and discussion of whether welfare payments are being accessed by "non-fishing community members" (who may fish but do not belong to the traditional fishing community) or by non-fishers (who may be members of the "traditional fishing community" but do not necessarily engage in fishing) is often animated.

Key Recommendations

Securing rights

Improving the extent to which fisheries stakeholders are able to **exercise clearer rights** over the resources on which they depend for their livelihoods is likely to constitute a key part of any future programme for addressing the sustainability issues facing fisheries in Tamil Nadu and Puducherry. This clearly represents a challenge as currently superior access to capital and technology plays an important role in determining the effective "capture" of rights by those able to command that access. Therefore any future discussion aiming at placing some limits on fishing rights has to also address the issue of distribution of rights across different types of fishing activity and levels of technology.

The issue of the relative **inclusiveness of rights** is also one that requires considerable attention. While fisheries-related activities in both states continue to be dominated by members of the traditional fishing community, there are clearly challenges involved in determining exactly a more limited set of entitlements to fishing rights and enforcing them.

Fishing communities emphasise that they have the capacity, through their traditional institutions, to take on a higher degree of stewardship of the resource, but there are clearly signs that, up until now, conflicts of interests among actors within these traditional institutions have meant that long-standing conflicts between small-scale fishers and larger mechanised boats have not always been effectively resolved. However, there is evidence that the growing sense of urgency over fisheries resource decline has encouraged the development of consensual solutions that could provide a basis, in some areas, for work on future management.

Among the majority of fishers, who are those involved in motorised and non-motorised fishing with small traditional or FRP craft, there is a strong desire to see limitations placed on mechanised fishing (in particular trawling but also purse-seining) with a view to redressing the current perceived imbalance in access to resources. However, it is also clear that a simple restructuring of effort without establishing a clear framework for fishing rights and their enforcement into the future would be likely to simply restructure the underlying problem and fail to address its causes.

Improving governance

A key element in any future framework for improved fisheries management will be improvements in the overall governance of fisheries. This will clearly require considerable time to evolve but, based on the outcomes of the FIMSUL Stakeholder and Livelihoods Analysis Process, it is clear that several elements are likely to be central to this.

- Mechanisms are required to ensure that the fishing community is **better represented** and able to **articulate its concerns and proposals** more clearly and consistently in relation to policy makers and institutions concerned with fisheries. Experience with the FIMSUL Visioning Process as well as the Stakeholder and Livelihoods Analysis Process shows that fisheries stakeholders, in spite of their contrasting sets of interests, are motivated to engage in consultations that will enable them to develop appropriate and inclusive proposals for resolving current issues in fisheries. There is clearly an opportunity to establish mechanisms that will allow such consultations to take place in the future and build a forum or platform that can be recognised by the relevant institutions as a counterpart in developing effective co-management solutions for the future.
- Such mechanisms will need to take into account the significant differences that are present between different areas along the coasts of Tamil Nadu and Puducherry and allow them to be effectively represented in consultations. Taking into account also the length of the coastline involved, this will likely require a series of **area-based fisheries councils** with some form of overall body that can interact with state-level institutions and policy-makers. Time and care will be required to establish the exact roles and responsibilities, as well as the mandate and legitimacy, of such bodies and it will be important to work first on understanding these roles and responsibilities before defining a precise structure for such bodies – function should come before form. Particular attention will need to be paid to the role of traditional institutions within the fishing community in relation to these bodies.
- Particular attention will need to be paid to enabling these new mechanisms for representation and consultation among fishing communities to **engage with wider issues concerning coastal development** that are having an important impact on fishers livelihoods. In particular, this is likely to involve engagement with industry, Planning Commissions, the Departments of Environment and Tourism and all those institutions involved in coastal and marine planning. The perceived gravity of some of the issues surrounding changes in coastal land use indicates this as a possible entry point for the development of fisher community forums.
- Considerable attention will also need to be paid to the **roles of the respective Departments of Fisheries** of Tamil Nadu and Puducherry in relation to such bodies. Ideally, the Departments could play a facilitating role where they could support the establishment of these forums and facilitate the process of defining exactly what their role should be. This is likely to require some development of the capacity of the Departments as facilitators and improve their understanding and skills in supporting institutional development. In order to play a facilitating role, attention will also need to be paid to ensuring a clear separation between the Departments' service provision, welfare and policy making roles and their capacity as facilitators in these new bodies.

- Improved **management of information and knowledge,** as discussed in the outputs of Work Package 6 of FIMSUL on Knowledge Management, would also play a key role in this process. Both the Departments of Fisheries and those involved in any new institutional structures developing to consult, advise or play a role in implementing fisheries management would need to pay careful attention to ensuring that the demand for information and its provision is catered for and that appropriate instruments are available to ensure that all stakeholders involved have ready access to the information they require in order to participate in consultations with the best possible information available to them.

Supporting change

In order to support processes of change in the fisheries sector, it is also important that some of the more immediate issues facing the fisheries sector and consistently raised by fisheries stakeholders are addressed.

Several pathways of action are available.

- The emphasis placed almost universally by all fisheries stakeholders on the need to ensure **appropriate education** for their children represents an important opportunity. Many improvements have been introduced but there are clearly still issues remaining regarding the quality of education available to children from fishing communities and these should be addressed. This is likely to require close cooperation between the Departments of Fisheries and Departments of Education to ensure that fishing communities are able to access better educational facilities and receive the support required in order to encourage fisher children to finish school and achieve levels of educational attainment on a par with other communities.
- In order to provide fishing communities with the **support** they need **to develop sustainable livelihoods,** whether within the fisheries sector or outside, there is clearly a need to adopt an inter-agency, cross-sectoral approach. Key elements that need to be ensured are: access to **appropriate infrastructure and services,** including clean water and health care where these are lacking; the encouragement of **alternative finance systems** that would allow fishing communities to have greater choices regarding sources of financial assets and give them greater flexibility to invest in enhancing their current activities, or in diversifying or changing their livelihood strategies; access to a **wider range of skills,** particularly those relating to identifying and assessing livelihood options, understanding market opportunities and managing their businesses more effectively, whether in fisheries or outside the sector; ensuring that fishing communities are more **open to the range of economic opportunities** surrounding them by encouraging **better linkages with local government** and other programmes currently not extended to fishing communities.
- The experience of the FIMSUL project in facilitating **wide-ranging discussions and consultations** among fisheries stakeholders from different areas of Tamil Nadu and Puducherry has illustrated the value in encouraging wider contacts between fishing communities and consultations. This process needs to be continued and supported into the future. It will be particularly important, in this regard, to work on effective mechanisms to ensure that women in fishing communities are included in such consultative processes.
- **Safety measures for fishers,** while improved particularly since the post-tsunami rehabilitation phase, are still an important priority on which much work can be done and could provide an important entry point for closer collaboration with fishing communities.
- The incentives for major changes in the structure and role of the Departments of Fisheries are relatively limited at present. However, there is scope for the **introduction of new skills** within the departments that would empower them to play a more active role in the promotion of better fisheries management in the future. These would include:
  - ☆ Facilitation skills;
  - ☆ Conflict resolution skills;
  - ☆ Institutional development and analysis;
  - ☆ Planning and policy development based on evidence of policy impact and clear sectoral objectives;
  - ☆ Fisheries management and co-management support.

ABBREVIATIONS AND GLOSSARY

DHAN Foundation	Development of Humane Action (DHAN) Foundation (Madurai-based NGO)
District Collector	The key Government Civil Servant in charge of the administration at the District level
ECR	East Coast Road
FAO	The Food and Agriculture Organisation of the United Nations
FERAL	Foundation for Ecological Research, Advocacy and Learning (Puducherry-based NGO)
FGD	Focus Group Discussion
FIMSUL	Fisheries Management for Sustainable Livelihoods Project
FRP	Fibre-Reinforced plastic
GPS	Global Positioning Systems
GUIDE	Gandhian Unit for Integrated Development Education (Chengalpattu-based NGO)
kattumaram	A traditional craft common along the open beaches of much of Tamil Nadu and Puducherry. Originally consisting of 3 – 7 logs tied together providing a low-cost craft ideal for use from beaches with heavy surf. In Kanyakumari, motorized kattumaram are also used and some wooden kattumaram have been replaced by fibreglass variants.
MLA	Member of the Legislative Assembly – a local level political representative
NGO	Non-Governmental Organisation
panchayati raj	The lowest level of representative government in India, in which gram panchayats are the basic units of administration. It has 3 levels: village, block and district.
PLANT	Participatory Learning Action Network and Training (Chennai-based NGO)
sangam	An association or organisation: often used to refer to grass-roots organisations at the village or local level
SHGs	Self-Help Groups
SIFFS	South Indian Federation of Fishermen Societies
SSLC	Secondary School Leaving Certificate
surukkumadi	A ring-seine
TAFCOFed	Tamil Nadu State Apex Fisheries Cooperative Association Limited - the apex organisation for official fisheries cooperatives in the state.
Traditional panchayat	The village-level institutions where conflicts and issues within the community are traditionally addressed and solved. In fishing communities on the Coromandel Coast, there are also traditional structures based on the panchayat that go beyond the community level and address issues that might arise between different fishing communities.
TMSSS	Thoothukudi Multipurpose Social Service Society (Thoothukudi-based NGO)
tsunami	Japanese term used worldwide for a tidal wave caused by under-sea earthquakes or landslides
UNDP	United Nations Development Programme

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1. Introduction

1.1 Background to the FIMSUL Project

The FIMSUL project was originally designed during the course of two missions undertaken by a combined FAO / UNDP / World Bank team in 2006. The concept for the project originated from concern regarding the state of fisheries in the Union Territory of Puducherry and the State of Tamil Nadu in the wake of the relief and rehabilitation efforts after the Indian Ocean *tsunami* in 2004. This disaster generated an unparalleled response on the part of the Government of India, both at the central and state levels, from civil society and from the international community. As a result, the livelihoods of people in the fisheries sector in Tamil Nadu and Puducherry, which had been particularly badly affected by the catastrophe, both in terms of loss of life and in terms of destruction to fisheries equipment and infrastructure, were largely restored.

However, at the time, concern was expressed that the efforts to rehabilitate fisheries were not necessarily taking proper account of the real capacity of the fisheries in the region and those problems that had already been facing the fisheries sector even before the tsunami. During the 2006 missions, rehabilitation efforts were seen to have already led to a considerable increase in fishing effort compared with the pre-tsunami situation and, while the relief efforts had brought about a significant positive change in the living conditions of fishing communities along the Tamil Nadu and Puducherry coastlines, this increase in fishing effort posed a significant threat to the sustainability of fishers' livelihoods and the benefits achieved after the tsunami. There were important indications, even before the tsunami disaster, that the fish stocks along the coast were under pressure and were showing increasing signs of over-exploitation. The increase in fishing capacity following the post-tsunami rehabilitation efforts was likely to exacerbate this situation.

Key concerns focussed on the open-access nature of fisheries along the coasts of Tamil Nadu and Puducherry, making it extremely difficult to regulate fishing effort in any way and encouraging the development of conflicts between different users of the fisheries resources. The result was likely to be increasingly intense exploitation of the resource, a progressive degradation of the resource base and, in the long term, increasing vulnerability for the livelihoods of people currently engaged in the fisheries sector.

Based on the 2006 missions, a concept for a Fisheries Management and Sustainable Livelihoods (FIMSUL) Project was developed. The World Bank made a US$ 2.5 million grant available for this activity which was intended as a project to "set the scene" for longer-term efforts to achieve better management in the fisheries and more sustainable livelihoods for those engaged in the sector.

In April-May, 2010, following approval of this project, an Inception Mission was carried out to review the original proposal, make appropriate adjustments to the project plan, develop a detailed workplan and budget for the project and initiate the process of creating a project team based in Chennai. The Inception Report was approved in August, 2010.

Under the work plan developed during this Inception Mission, the FIMSUL project was divided into a series of interlocking work packages. These consisted of:

- Work Package 1 : Stakeholder Analysis and Visioning;
- Work Package 2 : Fisheries Policy Development;
- Work Package 3 : Livelihoods Baseline, Support and Best Practice;
- Work Package 4 : Institutional and Legal Frameworks;
- Work Package 5 : Fisheries Management Systems;
- Work Package 6 : Livelihoods Status and Impacts: Knowledge Management for Change;
- Work Package 7 : Future Planning.

1.2 Planning for the Stakeholder and Livelihoods Analysis

Early on in the planning of the work for Work Packages 1 and 3 of FIMSUL, it became apparent that there was significant overlap between the key processes that needed to be undertaken to complete both of these sets of work.

Work Package 1 : Stakeholder Analysis and Visioning was tasked with achieving an overall understanding of the stakeholders involved in fisheries throughout the coastlines of Tamil Nadu and Puducherry, with a view to then engaging representatives of those stakeholder groups in a process of developing a vision for the future of fisheries in both states.

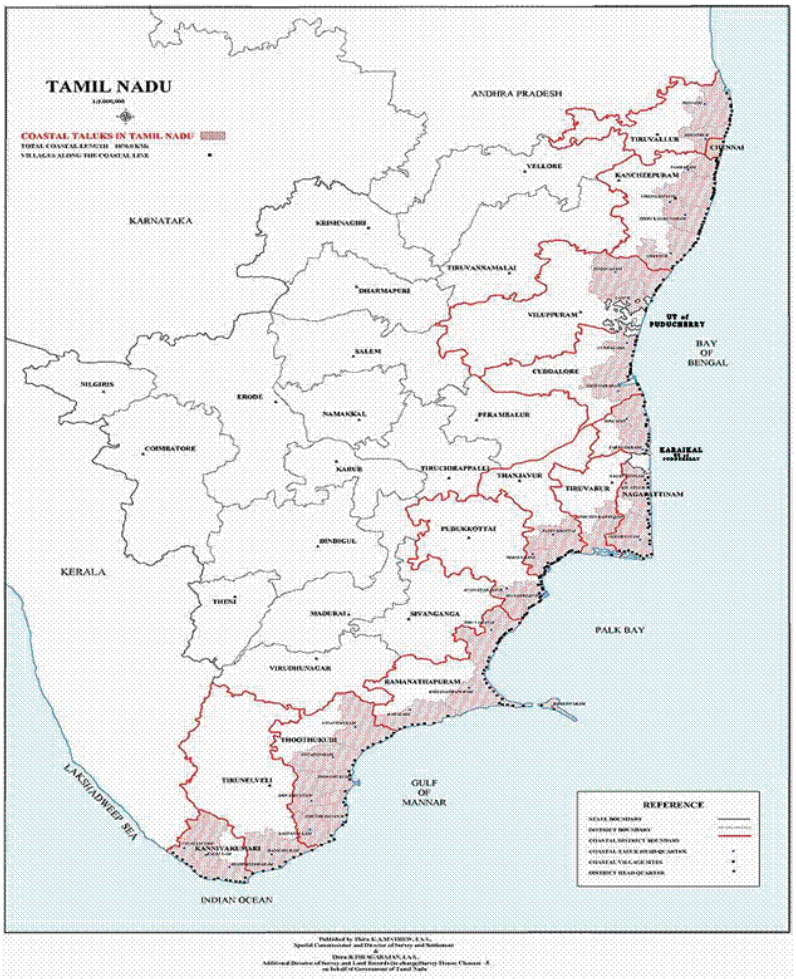
Work Package 2 : Livelihoods Baseline, Support and Best Practice had two distinct elements. First of all, an analysis of the livelihoods of stakeholders involved in fisheries (based on the outputs of Work Package 1) and an assessment of best practice in work to support livelihoods and livelihood change. The first part of this work was explicitly interlinked with the stakeholder analysis work to be conducted by Work Package 1 and it was therefore decided to combine the work at the field level that both work packages would need to conduct in order to achieve their goals.

The conduct of the work was therefore planned as a single Stakeholder and Livelihoods Analysis Process.

Particularly in the wake of the national and international relief efforts following the 2004 *tsunami,* a considerable amount of work had already been conducted in fishing communities along the coasts of Tamil Nadu and Puducherry. This included some extremely thorough studies of the livelihoods of people involved in the sector and several stakeholder analyses. However, the majority of these studies had an essentially local focus, being commissioned by agencies working in specific communities or areas. In addition, most of these studies had, understandably, concentrated on those areas of the coast most affected by the tsunami disaster, particularly the Coromandel Coast from Point Calimere in Nagapattinam District up to Chennai, and including Puducherry and Karaikal. While some relief work had been carried out in the more southerly, and generally less affected Palk Bay and Gulf of Mannar areas and in Kanyakumari, no study was available that effectively looked at the entire coastline of Tamil Nadu and Puducherry.

In the context of a project, like FIMSUL, aiming to prepare the ground for the development of effective fisheries management across this area, a more comprehensive study was therefore essential and the Stakeholder and Livelihoods Analysis Process therefore aimed to cover all coastal districts in Tamil Nadu and Puducherry. These are shown in the map in Figure 1 below.

Figure 1: Tamil Nadu and Puducherry: Coastal Districts



2. Methodology

Work Packages 1 and 3 have been made up a series of inter-locking activities which are concisely presented in Figure 2 below which shows the relationships between the various activities undertaken and the outputs of the Work Package as a whole. At an early stage in the project's development, significant overlaps between Work Package 1: Stakeholder Analysis and Visioning and Work Package 3: Livelihoods Analysis were identified and it was therefore decided to combine the work in the field so as to maximise synergies and efficiency in implementation in the field.

Figure 2 also shows how the outputs of the work reported on in this document have also contributed to the Visioning Process, the Baseline of Fisheries Livelihoods and the study of Best Practice in Livelihoods Support which are reported on separately.

2.1 Partnerships

The work on Stakeholder and Livelihoods Analysis was carried out in close collaboration with a group of 6 project partners from the NGO sector. These partners were identified and invited to work with FIMSUL based on their existing strong relationships with coastal communities in different parts of the coastline of Tamil Nadu and Puducherry and their previous experience in conducting participatory research at the field level.The project partners involved in the work, and the areas in which they operated are shown in Table 1 below.

Table 1 : Partners involved in the FIMSUL Stakeholder and Livelihoods Analysis Process

Districts covered	Partner Organisation	Full title and base
Tiruvallur	PLANT	Participatory Learning Action Network and Training, Chennai
Chennai		
Kancheepuram	GUIDE	Gandhian Unit for Integrated Development Education, Chengalpattu
Viluppuram		
Puducherry	FERAL	Foundation for Ecological Research, Advocacy and Learning, Puducherry
Cuddalore		
Nagapattinam	SIFFS	South Indian Federation of Fishermen Societies, Thiruvananthapuram
Karaikal		
Tiruvarur		
Thanjavur		
Pudukottai	DHAN Foundation	Development for Human Action (DHAN) Foundation, Madurai
Ramanathapuram		
Thoothukudi	TMSSS	Thoothukudi Multipurpose Social Service Society, Thoothukudi
Tirunelveli		
Kanyakumari	SIFFS	South Indian Federation of Fishermen Societies, Thiruvananthapuram

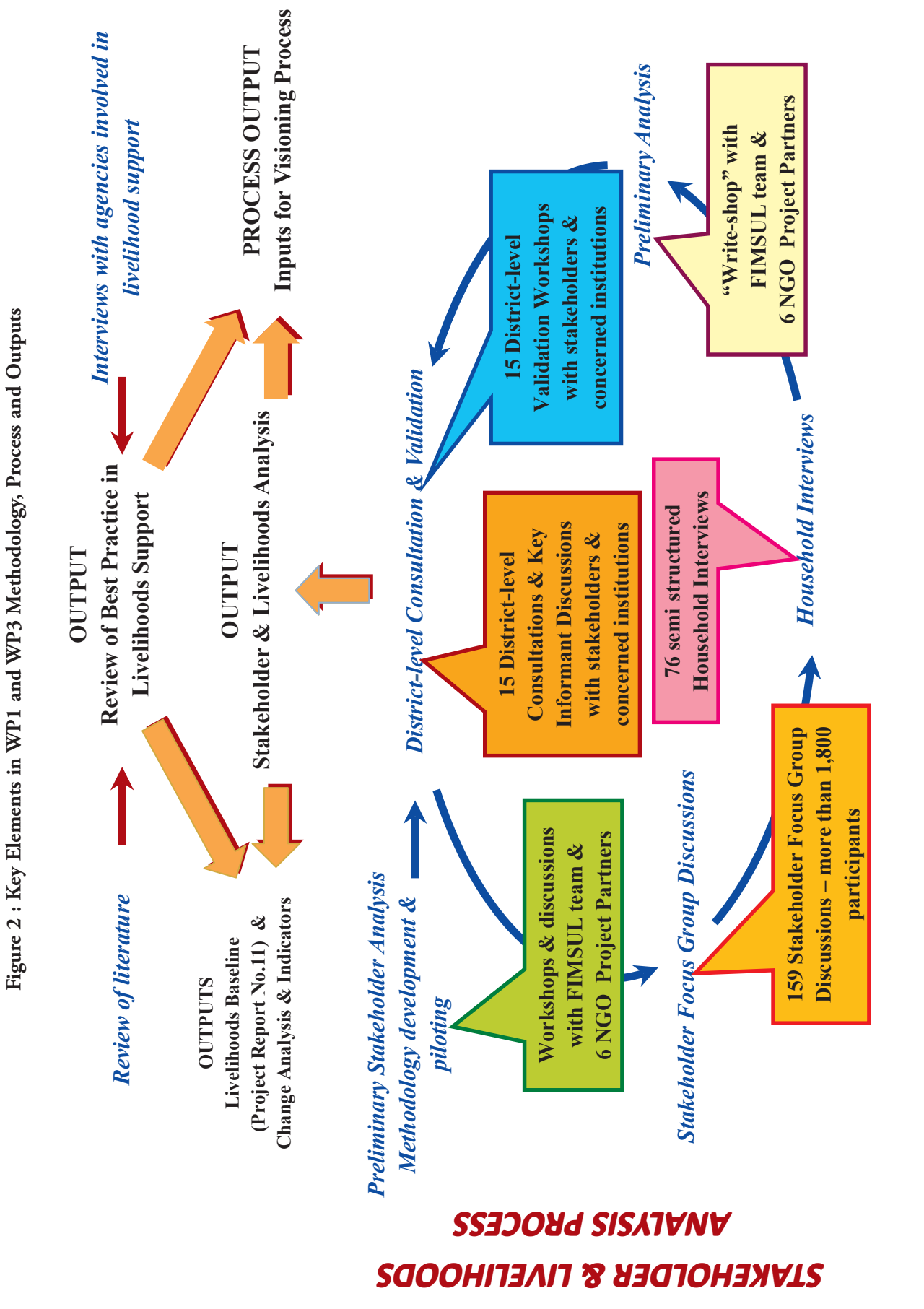


Figure 2 : Key Elements in WP1 and WP3 Methodology, Process and Outputs

2.2 Methodology development

FIMSUL's partner organisations also played an important role in the development of an appropriate methodology for conducting the Stakeholder and Livelihoods Analysis Process. The methodology was discussed with partners at a series of workshops held in October – November, 2010 and a draft methodology was piloted in the field in close collaboration with GUIDE in selected fishing communities in Kancheepuram District in late October, 2010.

In developing this methodology, two key points had to be taken into account:

- The need to ensure thorough coverage and representation of different stakeholder groups and the diversity of different areas of the coast, and the fisheries stakeholders found in those areas;
- The desire to make use of the systematic consultations carried out under the Stakeholder and Livelihoods Analysis Process to not only generate relevant findings, but also to generate interest, commitment and participation among stakeholders to take part in the planned Visioning Process that would follow on from this work.

The relationship between the Stakeholder and Livelihoods Analysis Process and these other elements of WP1 and 3 are shown in Figure 2.

The central elements in the approach used for the Stakeholder and Livelihoods Analysis Process included:

1. A series of multi-level discussions, at the District, District-level Key Informant, Stakeholder Focus Group and Household levels.
2. The generation of "layers" of learning at each of these levels permitting teams to develop an in-depth understanding of the key characteristics of different stakeholder groups involved in fisheries and the nature and dynamics of the livelihoods.
3. A preliminary stakeholder analysis based on secondary literature, and then discussed and revised at preliminary District-level consultations.
4. At these District-level Consultations, involving a range of fisheries stakeholder representatives as well as concerned agencies, both from within the fisheries sector and outside, a historical timeline of activity was used to construct a general picture of processes of change in the District so that more specific changes within fisheries could be put in context.
5. These discussions, and subsequent discussions with key informants familiar with the fisheries sector in each district, were used to make an initial identification of fisheries stakeholder groups. This process, conducted in all 13 coastal districts of Tamil Nadu and in Puducherry and Karaikal, generated a total of 31 stakeholder groups at this stage.
6. The subsequent 159 Focus-Group Discussions carried out in the field were organised with all of these distinct stakeholder groups. For the purpose of subsequent analysis, some of these stakeholder groups were consolidated where there was either overlap with other groups or members clearly had very similar characteristics. Table 2 below reviews the range of stakeholder groups involved in the Focus Group Discussions, the numbers of FGDs organised with each stakeholder group and number of participants, and finally the number of coastal districts where these FGDs were organised.

Table 2 : Stakeholder Groups involved in FGDs							
Fish harvesting stakeholders	**FGDs**	**Participants**	**Districts**		**FGDs**	**Participants**	**Districts**
FRP Boat Owners	17	233	13	Shore seine owners	3	50	3
FRP / trawler crew	17	196	11	Shore seine labour	2	25	1
Trawler owners	11	113	10	Vallam owners	2	27	2
"Specialised" fishers (cuttlefish, deep-sea, "stay", hook & line, trap & cage)	8	81	5	Marine snail catchers	1	18	1
Kattumaram fishers	7	76	7	Ornamental fish collectors	1	13	1
Backwater fishers (non-fishing community)	6	75	4	Sea cucumber collectors	1	26	1
Ring seine owners/ shareholders/operators	4	37	4	Shell divers	1	5	1
Vathai owners	3	46	2				
Post-harvest fisheries stakeholders (processing and marketing)							
Fresh fish vendors	18	220	13	Auctioneers	2	18	2
Dry fish vendors/ processors	9	133	9	Dry fish processing labour	2	27	2
Agents	7	48	7	Fish processing labour	1	15	1
Fish traders	3	46	2				
Seaweed collectors/cultivators							
Seaweed collectors	2	33	1	Seaweed cultivators	1	16	1
Service providers							
Boat builders	6	58	5	Boatyard owners	1	17	1
Ice producers	5	19	5	Head loaders	1	12	1
Mechanics	3	21	3	Net repairers	1	14	1
Transporters	3	35	3	Trawler lifters	1	11	1
Ice vendors	2	18	2				
Other							
Women SHG members	2	25	2				

7. During these Focus Group Discussions the focus was on three key areas:
    - the process of change in the fisheries sector, with participants asked to explore what changes that affected their livelihoods they felt had taken place in fisheries;
    - the ways in which different stakeholder groups have adapted to, or coped with, these changes;
    - the factors supporting or inhibiting them in dealing with change;
    - their hopes and aspirations for the future, including their personal aspirations, their aspirations for their children and their aspirations for their community as a whole.
8. Check-lists of key areas of interest and topics to guide these discussions (rather than closed questionnaires). This approach encouraged those facilitating the FGDs to help stakeholder groups to themselves analyse the conditions they face and changes they have had to address. The records of these discussions were could then be compared to identify common, and specific, themes across and between different areas and stakeholders groups in to generate a more generalised picture across the two states.
9. A more limited number of household-level interviews conducted with a purposive sample of individual stakeholder households. These were designed to provide an opportunity to explore some of the changes identified in the FGDs in more detail, and understand better how change and adaptation to change played out in reality at the household level. They thus provided important case studies that could be used to illustrate the more general issues identified through the analysis of the FGDs.
10. A preliminary analysis conducted by FIMSUL and the partner organisations together followed by a series of District-level Validation Workshops where key findings were presented back to a wider-ranging group of fisheries stakeholders from the District and concerned agencies and institutions in order to verify the findings, check on the interpretation of data given by the teams and to discuss the implications of these findings at a more general level.
11. At these District-level Validation Meetings, efforts were made to engage with a wider range of stakeholders compared with the original District-level consultations in each District with a view to mobilising interest and reflection in view of the subsequent Visioning Process that was to follow.

The key analysis carried out of the material generated by these various levels of discussion was the analysis of the Focus Group Discussion materials. These were reviewed to identify common themes or sets of issues that were consistently identified and then the notes from each focus group discussion were read through to identify which of these themes and issues were identified in each one. An Access database was used to enter these varied responses allowing an analysis of responses according to stakeholder group, area and location, gender of the participants in the Focus Group Discussions and according to sets of issues, as required.

This analysis was used to generate tables such as the one below which provided a simple graphic representation of key findings in a bar chart format. For these graphics, a simple colour-coding system was used to assist in identifying the key areas or themes that different Focus Group Responses highlighted. Figure 3 shows an example of one of these graphics and a complete set of them are contained in the appendices of this report.

In addition, the more limited set of 76 Household Interviews were used to provide case studies illustrating how some of the changes and factors affecting change identified during the Focus Group Discussions actually “play out” in real life. Some of the outputs of the Household Interviews are used to illustrate points in the discussion below.

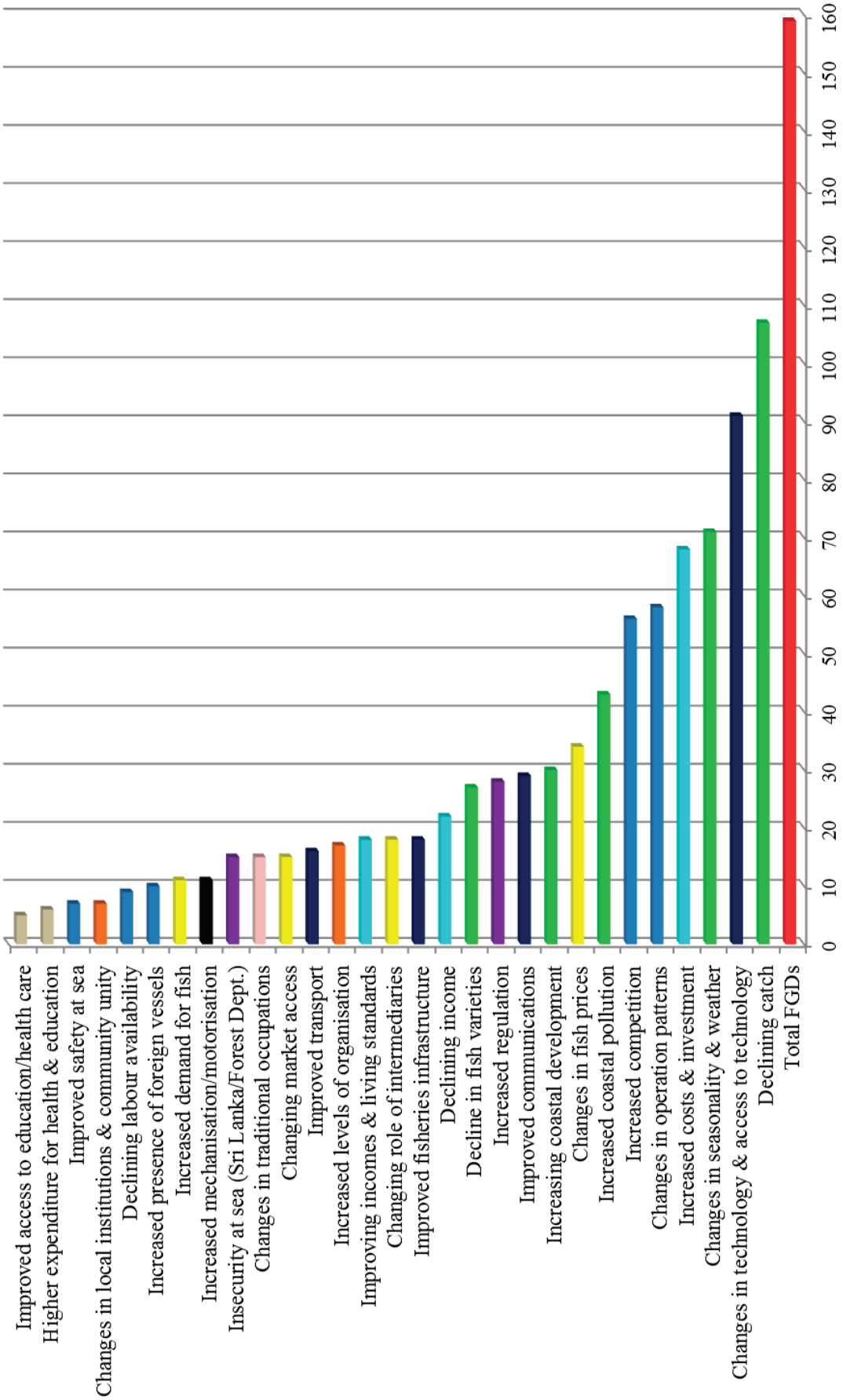


Figure 3 : Example of graphic representation of key findings from the Stakeholder and Livelihoods Analysis Process

More details on the partners involved, the coverage of the study and the methodology used are provided in Annex 1. A detailed set of guidelines for the implementation of the Stakeholder and Livelihoods Analysis Process have also been prepared. This is available as a separate publication and can also be downloaded from on the FIMSUL website.

2.3 Implementation

The key milestones in the implementation of the work for Work Packages 1 and 3 are laid out in Table 3 below.

Some delays to implementation of the Stakeholder and Livelihoods Analysis Process in the field were caused by the calling of State Legislative Assembly Elections in May, 2011 and restrictions on the holding of public meetings during the period leading up to these elections. However, through the excellent cooperation received from the respective Departments of Fisheries in Tamil Nadu and Puducherry and their local officers, as well as the efforts of the partner organisations involved, it was generally possible to continue the work in spite of these impediments.

Table 3 : Stakeholder and Livelihoods Analysis Process - Key Milestones

Activities	Timeframe
Identification & recruitment of FIMSUL WP1 & 3 National Consultants	August - September, 2010
Identification & recruitment of WP1 & 3 partner organisations	September, 2010
1° Workshop on Stakeholder & Livelihoods Analysis Methodology (Chennai)	5th – 8th October, 2010
Pilot testing of draft methodology for Stakeholder & Livelihoods Analysis Process (Kancheepuram District)	13th – 14th October, 2010
2° Workshop on Stakeholder & Livelihoods Analysis Methodology (Puducherry)	23rd – 25th November, 2010
Finalisation of Stakeholder & Livelihoods Analysis Methodology & development of guidelines	November – December, 2010
Implementation of District-level Consultations, Focus Group Discussions & Household Interviews	December, 2010 – March, 2011
Preliminary Analysis & "Write-Shop" with FIMSUL partners (Chennai)	4th – 8th April, 2011
Validation Meetings at District level	May - June, 2011
Finalisation of District Reports & findings by FIMSUL partners	May - June, 2011
Final analysis & development of draft report on Stakeholder & Livelihoods Analysis	July – August, 2011
Inputs to FIMSUL Visioning Process	September – October, 2011
Reporting on Livelihoods Baseline & Change Analysis	November – December, 2011

3. Key Changes Affecting Fisheries

At the District-level Consultations held to initiate the work in each of the areas covered, participants were asked to identify key changes that had taken place over the last 20 years in their areas. While special attention was given to fisheries, participants were encouraged to also identify other key changes in the broader environment that might have affected fisheries or fisheries stakeholders indirectly. The subsequent Focus Group Discussions held with specific stakeholder groups then offered an opportunity to elaborate on these key changes.

The key changes identified included:

- **Changes in access to fisheries resources :** Both District-level consultations and the subsequent FGDs emphasised a strong perception among most fisheries stakeholders that fisheries resources are in decline. Increasing competition at sea among fishers was recognised as contributing to this as more fishers chase fewer fish, but there is also a strong perception that certain species of fish have all but disappeared and that coastal fisheries resources are under increasing pressure.

- **Changes in the coastal environment :** Both District-level respondents and FGDs emphasised how increasing urbanisation, industrial development in coastal areas, real estate and tourism development, and harbour construction have combined to change the face of the coast in many areas. Pollution, declining water and air quality, and pressure on space along the coast are all seen as having important impacts on coastal people and their livelihoods.

- **Changes in the marine environment :** In the wake of the 2004 tsunami which affected the Coromandel Coast of Tamil Nadu and Puducherry in particular, there is a strong perception that currents and the morphology of the sea bottom has changed significantly, reducing the effectiveness of fishers' acquired knowledge and experience of the marine environment.

- **Changes in weather and seasonality patterns :** Previously relatively reliable patterns of weather and seasonality are also widely perceived to have changed very significantly over the last 10-15 years. In extreme cases, respondents at different levels felt that it was irrelevant to still talk about "seasonality" in fisheries as patterns of weather, and associated changes in the marine environment and resources, have become entirely unpredictable.

- **Changes in technology and access to technology :** The technology available to fishers is also widely identified as a key change at all levels. This is recognised as a longer-term process that initiated in the 1970s with the introduction of trawling and new types of fishing net, but which has gathered pace in the last 10-15 years, with the major upgrading of craft, gear and technology after the 2004 tsunami disaster having a major impact. It is widely perceived now that a constant process of acquisition of new gears, boats, motors, and navigational and fishing aids has become an integral part of fishing activity.

- **Changes in infrastructure :** This has taken place both at the wider level, with communications, road facilities, schools and health care structures and electricity all becoming more readily available in coastal areas. More specifically in fisheries, harbour facilities with better marketing and service infrastructure have been increasing steadily, often changing the way in which fishing operations are carried out. The development of ice production has made the use of ice both on-board and on shore, widespread.

- **Changes in patterns of employment :** Urban development and the growth of industries and service sectors in Tamil Nadu and Puducherry is perceived to have encouraged more mobility in the population at large in search of new opportunities, and this has affected fishing communities as well. Migration, either within the state and country, or abroad to the Gulf States is also seen to have changed employment patterns profoundly in some areas. Within fisheries, particularly after the tsunami relief efforts, labour is perceived to be in shorter supply as more fishers own their own craft and fishing operations. Improved educational opportunities have also changed the expectations that fishers have for their children, a feature strongly emphasised during the FGD meetings with almost all fisheries stakeholder groups.

- **Changes in governance and institutions :** During the FGDs with specific stakeholder groups, very limited mention was made of changes in governance arrangements or of local government institutions such as the *panchayati raj*. However, it was widely reported during the FGDs that levels of organisation and representation among fishers have increased significantly. Membership of producer associations and *sangams* is now relatively widespread and the spread of Self-Help Groups (SHGs) as a further mechanism for building social capital was also noted in some areas. The role of traditional institutions, such as the traditional fishing *panchayat* also seems to have changed, with the emergence of new forms of organisation and new expectations of community leadership. In the southern part of Tamil Nadu, the role of Catholic parish councils remains strong.

4. Fisheries Stakeholders

For the purpose of this analysis, the term "stakeholder" can be defined, relatively broadly, as any person, organisation or institution that has an interest in, derives benefits from or is in any way concerned with fisheries and the fisheries sector.

In this analysis, consideration is also given to those people or organisations that may not have an overt, direct interest in fisheries and the fisheries sector but may, as a result of their activities or interests, have a direct or indirect impact on the sector. Clearly, by taking this group into consideration, the possible range of "stakeholders" in the sector expands very significantly as the coastal areas where marine fishers live and operate tends to accumulate impacts from a wide range of activities. Activities in catchment areas in the hinterland may have significant impacts on coastal ecology. Coastal areas are also often a focus for a wide range of development – urban expansion, industry, power generation, tourism and real estate – which, while apparently not directly related to marine fisheries, can have very important impacts on fishing activities and the communities that depend on them. This is particularly the case in Tamil Nadu where coastal areas are currently a focus for numerous development processes that have complex interactions, including those with fisheries.

In the subsequent discussion, a variety of categories of stakeholder are identified. No attempt is made to directly distinguish between these by their relative "levels" of interest or the size of the "stake" that they have in fisheries. Rather, these categories are defined by the roles of the groups that fall within them.

These categories are :

- Those involved in directly harvesting fish, whether from the sea or from lagoons and backwaters;
- Those involved in the "post-harvest" sub-sector and concerned with processing, handling and marketing fish and fish products;
- "Service providers", or people who may not be involved in directly handling fish at all but provide services that are essential to the sector;
- Institutions and agencies, whether formal or informal that are concerned with fisheries in some capacity;
- Other individuals, organisations, institutions or corporations that, while not directly concerned with fisheries, through their activities or areas of interest have actual or potential impacts on fisheries.

4.1 Cross-cutting issues in identifying fisheries stakeholders

Several broad issues surrounding the identification of fisheries stakeholders need to be taken into account.

The "traditional" fishing community

Among those involved in fisheries, an important distinction is made between the "fishing community" and the "non-fishing community". This distinction is based essentially on the caste-based definition of those traditionally associated with fisheries, but has become particularly important as this has also come to be associated with eligibility for a range of state benefits that target those involved in fisheries, such as subsidies on fuel and other inputs, compensation and insurance schemes and welfare payments to support fishers' livelihoods during periods when fishing is restricted or banned. While involvement of "non-fishing community" members in fisheries still appears to be relatively limited, there is considerable concern within the fishing community regarding what is perceived as increasing involvement of "non-fishers" in the sector and their access to rights and benefits that are regarded as being exclusive to the fisheries community.

Overlaps between stakeholder groups

As a dynamic, highly competitive sector, where technical innovation and change is constant, the definition of stakeholder groups according to the nature of people's involvement in fisheries is inevitably reductive and there are many overlaps between important stakeholder groups. The interests of the different stakeholder groups identified may converge or diverge from the interests of other groups depending on the circumstances and the aspects of their

activities that are under consideration. For example, most people involved in ring-seine fisheries are also involved, at least seasonally, in fisheries using FRP boats. Thus the interests of ring-seiners may be similar to those of other FRP fishers in relation to fishing using their FRP craft while their interests may diverge significantly in relation to ring-seining, which many FRP fishers regard as destructive and a threat to fisheries resources. Similarly, women fish vendors are clearly have different interests to the fishers from whom they purchase their fish at the landing site, but, as many of them are the wives, daughters, mothers or relatives of those same fishers, their interests at the household level may be more closely aligned.

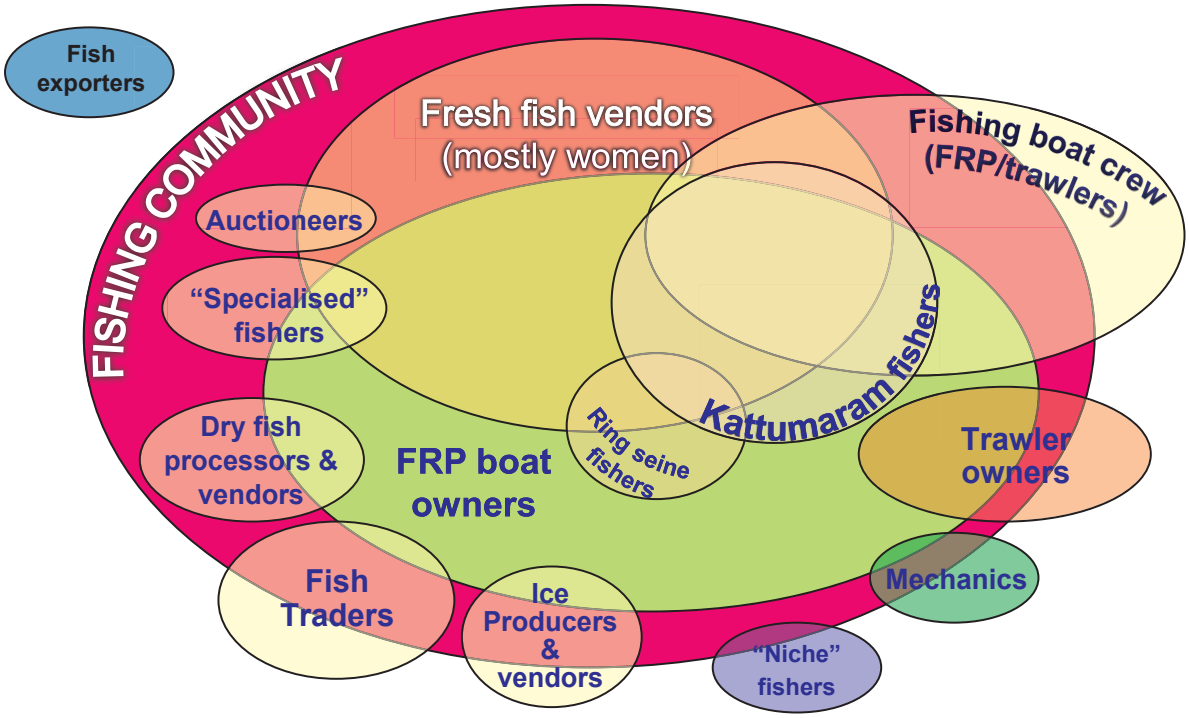
Figure 4 provides a succinct overview of some of these overlaps between different key stakeholder groups while Box 1 provides an illustration of these overlaps.

Box 1 : Diverse livelihood strands in Sothikuppam, Cuddalore District

MB, from Sothikuppam in Cuddalore District, comes from a family with a history of involvement in *kattumaram* fishing. He still regards *kattumaram* fishing as his principal activity, although he has also became a share-owner in a motorized FRP fishing boat provided as post-tsunami relief. 3 years ago, driven by declining catches from his *kattumaram* and FRP boat fishing, he also became a shareholder in a ring-seine operation. He says that this new activity has helped to provide him with a more stable income flow through the year. His eldest son, who lives with him, also has a share in the same operation and has abandoned his schooling to devote himself to fishing full-time while his second son has now migrated to Singapore for work. His third son, however, is now at college and will be the first child in the family to complete his education. His wife also works as a fish auctioneer and provides an important contribution to household income. Through this diverse combination of activities, MB has been able to build a house for his family in the village and feels that their lives have become generally better than in the past.

(Source : Household Interview by FERAL team – 10/02/2011)

Figure 4 : Overlaps between different fisheries stakeholder groups



4.2 Key Fisheries Stakeholder Groups

In order to facilitate a level of generalisation regarding fisheries stakeholder groups along the coast, some degree of consolidation of this diverse set of stakeholder groups was necessary. Clearly, some important groups that are present in some, but not all, areas could not easily be amalgamated with other stakeholder groups found more widely. For example, kattumaram fishers are an important group along the Coromandel Coast and in Kanyakumari but are not found in Palk Bay or the Gulf of Mannar, but still need to be handled as a distinct group because of their specific characteristics and the distinct level of investment in fishing that they represent.

On the other hand, there are also a variety of relatively "specialised" fisheries taking place along the coast, often involving fishing operations that have moved offshore to focus on deeper-water resources using gillnets or long-lines. Some of these involve longer term movements or "stay"-fishing where fishers base their boats and crews in a remote location in order to take advantage of new fishing opportunities there. These more specialised groups are small in number compared to fishers carrying out more diversified fishing using FRP boats or compared to trawlers, and they have been consolidated into "specialised" fishers.

Box 2 : Life on the margins in Thoothukudi District

KS comes from a community of shell divers who currently live at the Mullukambi Water Tank near Tuticorin. Traditionally, this vallayar community was engaged in the pearl fishing activities for which the Gulf of Mannar was once famous. With the development of the oil terminal at Hare Island, they were forced to move away from their village site and, since then, have been forced to live in increasingly insecure circumstances. At present, as if to emphasise the marginal existence they are now forced to lead, the community is camped in desperate conditions in huts hidden among the scrub not far from the harbour area. With the decline of pearl fisheries in the area (which many of them attribute to the increase in pollution at sea and in the air as a result of local industrial development), he shifted to diving for shells but even that has proved to be insufficient for supporting the livelihoods of his family and the community they live in. As a result, some members of the community are now learning to fish, using tiny vathai craft, although this is a relatively new activity for them and one they are just learning to master. However, at least this provides them with a minimum level of earning and enables them to survive. Their main fear at the moment is that they will be forced to move again as they have no rights to the land where they are currently settled and feel it is only a matter of time before the authorities make them move house yet again.

(Source : Household Interview by TMSSS team – 05/02/2011)

A similar logic can be applied to a range of fishing activities, often carried out by people who are not from the traditional fishing community, that exploit limited ecological niches. Perhaps the most widespread of these are the various forms of hand-fishing carried out by marginal, and often tribal, groups in lagoons and brackish water areas all along the coasts of Tamil Nadu and Puducherry. A range of these types of activity have been grouped together as "niche" fisheries. With this group, it is important to note that one of the defining characteristics used to characterise them was the level of social and economic exclusion and vulnerability that these groups are often subject to. This distinguishes them quite clearly from other specialised fishing groups along the coast. Box 2 illustrates one particular group of this kind from Thoothukudi District.

Table 3 below analyses these broader categories of stakeholders, with details of some of their key characteristics as a stakeholder group, where along the coasts of Tamil Nadu and Puducherry they are encountered, and some (very approximate) estimates of their annual income from fishing activities drawn from the FGDs and Household Interviews held with different groups.

Table 4 : Key stakeholder groups in fisheries in Tamil Nadu and Puducherry

Fisher Stakeholder Groups	Characteristics	Location	Numbers	Reported income range	Notes
FRP boat owners (including motorised country boats, vathai, vallam)	Male: 20-60 years: traditional fishing community	Throughout the coast	30-60% of most fishing communities	Rs.48.000 – Rs.70,000 per year	Probably largest single group. Overlaps with kattumaram fishers, ring-seine operators, fishing labour & country boat owners
Fishing crew (FRP & trawlers)	Male: 15-60 years: mostly traditional fishing community	Throughout the coast	20-50% of fishing communities	Rs.35,000 – Rs.45,000 per year for trawler crew – probably less for FRP crew	Some mobility of labour between FRP boats & trawlers. Labour on FRP boats may also be owners of own craft or of kattumaram.
Trawler owners	Male: 30-70 years: traditional fishing community: few non-fisher owners	Throughout the coast but concentrated at major fishing harbours	Between 6,000 – 8,000 trawlers across two states (limited multiple ownership)	Variable but generally >Rs.150,000 per year.	Perhaps 20% involved in other activities as well as fisheries.
Kattumaram fishers	Male: >45 years: traditional fishing community	Throughout the coast except Thoothukudi District	10-40% of fishing communities. Up to 50% in Puducherry.	c. Rs.25,000 per year from kattumaram fishing, but often supplemented by work as crew on other fishing craft & fishing with own FRP boats	Generally combined with other fishing activities, such a fishing labour on FRP.

Table 4 : Key stakeholder groups in fisheries in Tamil Nadu and Puducherry

Fisher Stakeholder Groups	Characteristics	Location	Numbers	Reported income range	Notes
"Specialised" fishers	Male: 30-70: traditional fishing community	Some all along coast, but more in Kanyakumari	< 5%. 10% in Kanyakumari	Wide range. From c. Rs.60,000 - > Rs.200,000 per year depending on scale of operation.	Developing group of skilled, entrepreneurial fishers fishing further off-shore with hook &line, gillnets. Various scales from converted trawlers to larger FRP boats.
Ring-seine fishers – owner/ operators/ shareholders	Male: 20-60 years: traditional fishing community	Some found all along coast. Not permitted in all communities.	c. 10% of fishing communities	For various partners involved, c. Rs.60,000 per year but very seasonal & often supplemented by operation of own FRP boats during other periods.	Formally a banned fishing gear but increasingly used as alternative. High investment operation usually involving up to 40 partners, most of whom would also be FRP boat owners or crew.
"Niche" fishers	Mixed male & female: mostly non-fishing community or tribal groups.	Limited to backwater & very shallow coastal areas but present in almost all districts	Small numbers	Rs.20,000 – 40,000 per year	Often subject to restrictive measures from traditional fishing communities regarding where & how they can fish. Usually members of very marginalised groups.
Post-Harvest Stakeholder Groups	**Characteristics**	**Location**	**Numbers**	**Reported income range**	**Notes**
Fresh fish vendors	Mostly female: 20-60 years: traditional fishing community	Throughout the coast	10-40% of fishing communities	Rs.20,000 – 40,000 per year	A fundamental part of the traditional fisheries system, they seem to be increasingly under pressure from the increasing diversity of actors involved in marketing & the demand for greater mobility.
Dry fish producers & vendors	Mostly female: 35-60 years: often older women & widows: traditional fishing community	Throughout the coast	c. 10%	Rs.10,000 – 20,000 per year	Probably one of the poorest groups within the fishing community. Suffering from declining demand for dry fish & increasing competition for fish catches.

Table 4 : Key stakeholder groups in fisheries in Tamil Nadu and Puducherry					
Fisher Stakeholder Groups	**Characteristics**	**Location**	**Numbers**	**Reported income range**	**Notes**
Fish traders, buyers &merchants	Mixed male & female (slightly more male): 25-60 years: mostly traditional fishing community, some non-fishing community	Throughout the coast, but non-fishing community traders mostly in larger harbours	< 10 % of fishing communities – small numbers of non-fishing community	>Rs. 100,000 per year	Involved in servicing local & distant markets. Non-fishing community traders also include some from other states, working at bigger scale & involved in other trading activities.
Fish agents	All male: non-fishing community	Throughout the coast	Small numbers	>Rs. 100,000 per year – reportedly as much as >Rs. 300,000 per year in some cases	Acting on behalf of larger traders & exporters, these actors are becoming increasingly important. Sometimes reportedly preferred by fishers as considered less "manipulative" & having better access to capital for advances & loans for fishing operations.
Auctioneers	Mixed male & female	Throughout the coast	A few in each landing site.	c. Rs.60,000 per year	Key figures at fish landing & rights to auctioneering reportedly keenly contested.
Exporters & fish processing plant owners	Male: non-fishing community	Urban based	Small numbers		
Service Provider Stakeholder Groups	**Characteristics**	**Location**	**Numbers**	**Reported income range**	**Notes**
Ice producers & vendors	Male: mixed traditional fishing community & non-fishing community	Throughout the coast but producers mostly based near harbours	Small numbers in each area	(Plant owners) > Rs.140,000 per year	Increasingly important. Often involved in other activities, including FRP boat ownership, fish trading, transport & as fish agents.
Mechanics	Male: mixed traditional fishing community & non-fishing community	Throughout the coast.	Small numbers in each area	Rs.50,000 – 140,000 per year	Often also involved in other mechanical work but in some areas completely dependent on marine engine repairs

Table 4 : Key stakeholder groups in fisheries in Tamil Nadu and Puducherry

Fisher Stakeholder Groups	Characteristics	Location	Numbers	Reported income range	Notes
Boat builders & repairers	Male: mixed traditional fishing community & non-fishing community	Throughout the coast but concentrated around harbours	Small numbers in each area	(Owners) >Rs.130,000 per year: (labour) c. Rs.50,000 per year	May also work on other forms of carpentry work: FRP boat construction more specialised. Steel boats (trawlers) built by larger companies.
Net makers & repairers	Male: traditional fishing community	Throughout the coast	Small numbers	-	Declining activity as most nets produced industrially & replaced rather than repaired. Net makers/repairers aspire to become suppliers/agents for net producers.
Shore-based labour & transporters	Mixed male & female – mostly male: mixed traditional fishing community & non-fishing community	Throughout the coast	Considerable numbers especially around harbours	Rs. 10,000-45,000 per year	Includes a wide number of different shore-based functions transporting fish from landings to markets & collection points, rickshaw pullers, driving transport, etc.

4.3 Institutional Stakeholders

A range of institutional stakeholders are also involved in the fisheries sector in one capacity or another. These include both informal, traditional institutions like the village panchayat and special traditional fisheries panchayat as well as more formal institutions such as government agencies concerned with fisheries and the organs of local government. Various forms of producer organisation are also playing an increasingly important role in representing the interests of particular stakeholder groups. Government-established Fisheries Cooperatives are seen primarily as channels for distributing Government welfare schemes.

The involvement of Government agencies other than the Fisheries Departments of Tamil Nadu and Puducherry is primarily related to the enforcement of regulations, safety and security issues at sea and conflict resolution.

Political representation of the fishing community is generally perceived as being relatively weak as coastal constituencies generally have a majority of non-fishing community inhabitants from the hinterland although there are some politicians from the fishing community.

Table 5 : Key institutional stakeholders in fisheries in Tamil Nadu and Puducherry		
Local authorities		**Civil society**
Village panchayat		NGOs
Traditional panchayat / Parish councils		**Fisheries education and research**
Union / District governments		Fisheries Research Institutes
District Collector		Fisheries College
Producer organisations		TN Maritime Academy
Fisher sangams		**Trusts and authorities**
Producer Associations		Gulf of Mannar Biosphere Reserve Trust
Fisheries Cooperatives		Marine Products Export Development Authority
Government departments		Coastal Zone Management Committees
Fisheries Department		Political representatives
Revenue Department		MLAs
Forests Department		
Police Department		
Coastguard		
Navy		
Meteorological Department		
Pollution Control Board		

4.4 Other key interest groups

Considerable importance was attached by participants in District-level Consultations and FGDs in emphasising how a range of other activities, and the groups involved in those activities, are also important "stakeholders" in fisheries where those activities and groups somehow affect fisheries and fisheries stakeholders. This was given particular salience in areas where there is considerable coastal development causing pollution or spatial issues in and around fishing communities. Table 5 identifies some of these activities and groups that participants felt were of particular relevance because of their direct or indirect impacts on fisheries.

Table 6 : Other groups affecting fisheries directly or indirectly in Tamil Nadu and Puducherry

Interest Groups	Notes
Power generation industries	Existing power plants on the coast are seen by fishers as having had negative impacts on fisheries resources and one the environment where fishers live and work. Planned thermal power stations in several areas of the coast, including Tiruvallur, Nagapattinam, Thoothukudi and Tirunelveli are viewed with great concern. Members of the fishing community have also been in the forefront of recent opposition to the construction and commissioning of the Koodankulam Nuclear Power Plant in Tirunelveli. Facilities for providing fuel to power plants are also often located along the coast and can have direct impacts on fishing communities and on the surrounding marine environment.
Chemical and manufacturing industries	Major developments along the coast in the Chennai area, in Cuddalore and Nagapattinam, and particularly around Thoothukudi were perceived as major threats to fisheries and fishing communities by respondents in these areas.
Desalination plants	In a water scarce area, concerns over the effects of desalinisation plants planned or under construction along the coast was expressed particularly in Kancheepuram District.
Wind power generation	While there do not seem to be any forcefully negative perceptions regarding wind power development (important in Tirunelveli District in particular) competition for space in coastal areas as a result was noted by some participants.
Port Authorities and harbour development	Port and harbour development inevitably makes demands on space where fishing communities might have been located. Such developments have affected, or are likely to affect, fishers around Chennai, Ennore in Tiruvallur District, in Nagapattinam District and in Thoothukudi District. The development of harbours is also reported to have had impacts on coastal erosion particularly on the coast of Kanyakumari.
Mining companies	Mining activities in Thoothukudi and Tirunelveli along the coast and in the immediate hinterland are perceived as having had damaging effects on coastal fisheries as a result of run-off and waste products.
Oil production and refining companies	While oil production is still limited along the coast, the potential for harmful interactions with fisheries was noted by many in the event of greater development in the future.
Real estate interests	Real estate development along the coast is perceived as putting pressure on the living and working space available for fishers. With the development of the East Coast Road (ECR), many areas of the coast have become more accessible and have been opened up to private developers. This process has been noted almost everywhere on the coast, but is particularly marked in Chennai, Kancheepuram, Viluppuram and Puducherry Districts.
Tourism and entertainment interests	Tourism is an increasingly important activity taking place along the coast, particularly around Chennai and Kancheepuram and Puducherry.

Table 6 : Other groups affecting fisheries directly or indirectly in Tamil Nadu and Puducherry

Interest Groups	Notes
Coastal aquaculture	There is concern regarding the effects on aquaculture development – both on fish prices (particularly for prawns) and on the local environment with concerns regarding polluting outflow and contamination of groundwater supplies. These issues have a particularly high profile in Pudukottai District.
Agriculture	While often playing a minor role in the livelihoods of fishing communities, there is awareness of the potentially harmful impacts of upstream agricultural activities on water quality in the coast.

Given the importance of perceived impacts from many of these interest groups and activities on coastal fisheries, considerable emphasis was placed on the need for these groups to be engaged in discussions relating to fisheries and the identification of mechanisms for influencing their behaviour to take more account of the needs of the fisheries sector (see Box 3).

Box 3 : Making fishers' voices heard in Thoothukudi

FRP fishers in Alanthalai, in Thoothukudi District, are alarmed by plans for industrial and power development in their area. They feel that plans for a thermal power station, a coal jetty to supply it with fuel, and a port development with LNG terminal in proximity to their village are likely to have devastating effects on both the local environment and on some of the key fisheries resources on which they depend, such as lobster and prawn. They are also afraid that plans to further develop the East Coast Road in their area are likely to open up the coast to real estate development and may lead, in the long term, to "…fishers becoming like gypsies ...and the fishing community becoming extinct like in Jurassic Park..." They also highlight how the lack of organisation among the fishing community means that it is difficult for them to get their voices heard in relation to these developments. They worry that, unless they "...get organised like farmers" to struggle for their rights, their communities may end up disappearing altogether, along with their fishing culture and their children's future.

(Source : Focus Group Discussion facilitated by TMSSS team – 24/02/2011

5. The Livelihoods of Fisheries Stakeholders through their Perceptions and Responses to Change

The following analysis and discussion looks at the outcomes of 159 Focus Group Discussions (FGDs) with representatives of different fisheries stakeholders groups held in the 13 coastal districts of Tamil Nadu as well as in Puducherry and Karaikal. It is divided into two main sections. In this first section, the discussions held during the FGDs about stakeholders' perceptions of change, their responses to change and the factors that have helped and hindered them in those responses are the main focus. In the second section (Section 6 below), the focus shifts to stakeholders' perceptions of future change and their aspirations for themselves, their children and their communities.

These FGDs focussed on change and people's responses to change as a key means of exploring participants' livelihoods.

5.1 Overall analysis of livelihoods among all fisheries stakeholders

Aggregated analysis of all the stakeholders involved in the FGDs is of limited significance given the distinct nature of the different groups involved, ranging from relatively wealthy owners of trawlers or fish agents, often urban-based, to extremely marginal tribal fishing groups fishing in backwaters. However, it does provide some general indications of priority areas within the sector and serves as a point of comparison for more focussed analysis in the subsequent sections.

Perceptions of key changes affecting livelihoods

Across the entire process, a wide range of different changes affecting peoples' livelihoods were identified. The open-ended nature of the process undertaken, asking open questions and encouraging participants to explore areas that they felt to be of interest, facilitated this wide-ranging discussion of changes.

As shown below, decline in fisheries resources was mentioned by the majority of FGDs. Box 4 illustrates how the impacts of this key change are seen by one fisher in Nagapattinam District. However other changes, often linked in with declining catches, also received considerable attention.

Across the 159 FGDs held, the key changes identified most frequently were:

- Declining catch – 107 out of 159 FGDs (67%);
- Changes in technology and access to technology – 91 FGDs (57%);
- Changes in seasonality and weather – 71 FGDs (45%);

Box 4 : Declining fish catches in Cheruthoor, Nagapattinam District

MG is an enterprising pattinavar fisher who, after the tsunami in 2004, purchased a 36' fibre-glass boat and started venturing for fishing into deeper waters. While the considerable investment he put into this new equipment and fishing gear seemed to pay off initially as it allowed him to move away from the overcrowded inshore waters and hunt new resources in the deep, now he feels that even catches in deeper waters are showing signs of stress. "After all this investment, hoping to be able to get better catches out there, I still come home half the time with empty nets." On top of that, he says it's increasingly difficult to find crew to work on his fishing boat. In order to make ends meet his wife is occasionally involved in fish vending but he is worried about the future. He places great faith in education for his children and they are all studying rather than fishing. He's particularly proud of his eldest daughter who recently got her BSc. and he hopes she will be able to get a government job in the future.

(Source: Household Interview by SIFFS team – 26/02/2011

- Increased costs and investment – 68 FGDs (43%);
- Changes in operational patterns – 58 FGDs (37%);
- Increased competition – 56 FGDs (35%);
- Increased coastal pollution – 43 FGDs (27%).

Adaptive strategies for dealing with livelihood change among all fisheries stakeholders

Adaptive strategies that different fisheries stakeholder groups identified as part of their responses to these changes were, predictably, diverse, but, significantly, by far the most commonly identified strategy involved some kind of **technological upgrade** (58% of all FGDs), often accompanied by **increased dependence on loans and advances** from a range of sources (52%). Higher investment in technology is clearly seen as the main response to declining catches and increasing levels of competition and increased indebtedness is a normal consequence of this. Many of the other strategies identified by different stakeholder groups **– change in fishing and operation areas** (31%), **increasing investment** (27%), and **changes in mode of operation –** the location, period, and organisation of livelihood activities – (26%) are effectively "sub-sets" of these two core strategies. **Accessing skills and knowledge,** particularly to make use of new technology, was also important for 24% of the FGDs. **Diversification of business and livelihood activities** (referring to activities significantly different from the stakeholder group's original activity) is identified as an option by 23% of the overall FGDs conducted, although as will be seen later, this varies considerably with the more specific stakeholder groups involved.

Across the 159 FGDs, the key adaptive strategies identified most frequently were :

Upgrade technology – 92 out of 159 FGDs (58%)

Increased use of loans and advances – 82 FGDs (52%)

- Changes in area of operations - 49 FGDs (31%)
- Increase in investments- 43 FGDs (27%)
- Changes in mode of operation – 42 FGDs (26%)
- Upgrading of skills through training (formal or informal) – 38 FGDs (24%)
- Diversification of business or livelihoods – 36 FGDs (23%)
- Scaling up or intensification of activities – 34 FGDs (21%)
- Making use of new infrastructure and transport opportunities – 34 FGDs (21%).

Factors supporting and inhibiting adaptive strategies among all fisheries stakeholders

While the numbers identifying and agreeing upon particular supporting strategies are generally lower compared to those who identified similar livelihood changes or adaptive strategies, the two elements most widely identified relate directly to the adaptive strategies most commonly mentioned **– access to appropriate technolog**y (78 out of 159 FGDs – 49%) and **availability of informal credit arrangements** (61 FGDs – 38%). The **positive market conditions,** reflecting a strong and apparently rising demand for fish, was also important (24% of all FGDs).

Perhaps the most striking element in the overall analysis of the discussions about supporting factors is how a range of factors relating to **social cohesion** and **support from institutional sources** are referred to. Sometimes the numbers of FGDs referring to a specific factor are not high, but taken in conjunction with those mentioning other similar factors, it is clear that social assets within the fishing community and the sector as a whole, and the support of government and non-government institutions, are perceived as playing an important role. 25% of FGDs mentioned the **unity and cooperation within the community** or within their specific groups within the community, as important in facilitating their adjustment to livelihood change. A network of **supportive relationships** with different players – **market intermediaries, producers and service providers** (22%), **customers and clients** (21%), and **family, relatives and friends** (19%) all indicate the importance of community cohesion for people in the sector.

Community or sector-based organisations such as producer associations and sangam are also mentioned by 16% of all FGDs, while **supportive Government action** was important for 19% and **supportive NGO action** for 15%. Box 5 provides an illustration of how different forms of social cohesion and local support helped one family in Ramanathapuram District.

Across the 159 FGDs, the key factors supporting stakeholders' adaptive strategies identified most frequently were :

- Access to appropriate technology – 78 FGDs (49%);
- Availability of informal credit arrangements – 61 FGDs (38%);
- Unity and cooperation within the group or community – 40 FGDs (25%);
- Positive market conditions and demand - 38 FGDs (24%);
- Supportive links with market intermediaries, producers and service providers – 35 FGDs (22%);
- Stable relationships with customers and clients – 34 FGDs (21%).

Box 5 : Starting afresh in Morepanai, Ramanathapuram District

VR's family originally lived in another village where her husband did illegal dynamite fishing and was addicted to alcohol. After years of constantly being in trouble with the police over his activities and increasing indebtedness because of his drinking habits, VR managed to persuade her husband that they should move to a new place and turn over a new leaf. So they came to Morepanai where local villagers were accepting and helpful. They were provided with some land for them to rent where they built a small thatched house and they were given all the support they could ask for to help them settle in. Her husband stopped drinking, and dynamite fishing, and, by selling his old vathai boat and taking loans from both a moneylender and the SHG that his wife had joined, has managed to purchase an FRP boat. This has given them more security of income and increased their status in the community. VR has become active in the SHG group she has joined and is now President of the group. But she says that without the help of local people, they would never have been able to make such a dramatic change in their lives.

(Source : Household Interview by DHAN Foundation team – 18/02/2011

The identification of factors inhibiting adaptation to livelihood change tended to mirror closely the changes identified by stakeholders during their discussions. Not all groups were able to easily identify these factors as distinct from their broader identification of changes, but 63 out of 159 FGDs (40%) identified **rising investment and running costs** for their activities as a key inhibiting factor making it difficult for them to adapt to change, while 16% also identified **limited access to credit** to cover these rising costs as an important obstacle. While increasing competition had already been identified by many participants in the FGDs as an important change, 18% saw **competition, with overcrowding at sea and on land, and rising levels of conflict,** as an important factor that also inhibits their capacity to adapt and respond to change. The **decline in fisheries resources** was mentioned by the same number of FGDs.

Across all 159 FGDs, the key factors inhibiting stakeholders' adaptive strategies identified most frequently were:

- Rising investment and running costs – 63 FGDs (40%);
- Fisheries resource decline – 28 FGDs (18%);
- Overcrowding, competition and conflicts at land and at sea - 28 FGDs (18%);
- Market uncertainties – 27 FGDs (17%);
- Limited access to credit for investment and operation – 25 FGDs (16%);
- Destructive and unsustainable fishing practices – 20 FGDs (13%).

Discussion

Overall, the picture that emerges looking at all the stakeholder groups contacted during the FGDs emphasises how, in response to a widespread perception of **declining fisheries resources,** the most important reaction across the sector has been to **invest more** in their livelihood activities in an effort to ensure a competitive edge over others and maintain some degree of access to those resources available. This investment also serves to deal with other important perceived changes such as increasing uncertainties in the weather and seasonal patterns affecting fishing and fishing-related activities. **Investments in new technology** (new craft, more powerful motors, more nets,) or, as in the case of post-harvest operators, simply being able to mobilise more money in order to ensure purchase of raw materials, has brought with it an **increase in the levels of indebtedness,** as most operators still depend on informal moneylenders for loans, or market intermediaries to provide advances for activities.

Clearly, all these "changes" are closely interlinked, with many of the "changes" identified effectively representing responses to other changes. **Changes in operation patterns,** whether regarding those involved in fishing or those working in land-based activities, are generally the result of these other changes. **New technology** allows fishers to fish further off-shore and access a greater range of landing sites (using new communications technology to identify those locations where they can get better prices for their catches). A greater **quantity and range of different fishing gears** allows them to adapt better to what is perceived as increasing uncertainty in fishing seasons and weather patterns. All of this requires financial resources, which involves increasing **dependence on mostly informal credit** lines. It is significant that accessing formal banking channels was only mentioned in a single FGD and the only alternative to money lenders or advances from market intermediaries seems to be **Self-Help Groups,** although this is mainly an option for women working in the post-harvest sub-sector. On land, **greater mobility** is clearly important, making use of new **infrastructure and transport facilities,** in order to both access fish wherever it is being landed and access new markets for sales. **Access to increasing operating capital** is also key for post-harvest operators to enable them to out-bid other buyers in an increasingly competitive marketplace in order to gain access to fish for their trade.

Major changes in livelihood strategy, either in the form of **diversification into new businesses** in addition to fisheries-related activities, or, in extreme cases, **moving out of fisheries** altogether, are still unusual or are relatively rarely regarded as real options.

The *availability of new technology* – nets, craft, engines, communications and navigation equipment – and credit underpin these strategies. However, it is also clear that stakeholders across the sector also depend on a **network of relationships** to enable them to continue to operate. These seem to be regarded as the most important sources of support as they operate on multiple levels – **good relationships with market intermediaries** can ensure access to operating capital in the form of **advance payments** for fishers or access to fish for processing and vending activities; **cooperation within the community** can ensure that support is available to deal with lean periods, injuries or sickness in the family and clearly provide an important sense of security in what is perceived as an increasingly insecure environment.

In considering those factors that make livelihood adaptation difficult, the emphasis seems to be placed on factors that are difficult to directly control – **rising costs** (also linked to wider inflation in the economy), **resource decline,** a general **increase in competition,** and **"uncertainties" in the market** – while more specific factors, such as **destructive fishing methods,** which assume more importance when stakeholders think about possible future courses of action, are perhaps considered less of an issue than might have been expected.

5.2 Livelihoods analysis of specific stakeholder groups

Differences in priorities in terms of changes and strategies to address changes were clear if a separation was made between those involved in fish harvesting ("fishers"), post-harvest operators and service providers. This section focuses on "fishers", or fish harvesters as a broad group, and then discusses some of the features of different specific stakeholder groups among these fishers.

In the analysis of "fishers" as a whole, those groups described in the stakeholder analysis above as "niche" fishers have been excluded, largely because they have very different social and economic characteristics compared to other fisher groups. The livelihoods of these "niche" fishers are discussed separately.

5.2.1 Fishers (or fish harvesters)

Key livelihood changes

Fishers, or those stakeholder groups (owners, operators and labour) involved directly in harvesting of fish, made up 77 out of the 159 FGDs. Among this "fishers" group, the key changes identified in the overall analysis are accentuated.

- Decline in fish catch – 107 out of 159FGDs (79% of fisher FGDs);
- Changes in technology and access to technology – 91 FGDs (68%);
- Changes in operational patterns – 42 FGDs (55%);
- Changes in seasonality and weather patterns – 71 FGDs (51%).;
- Increases in levels of investment and costs – 68 FGDs (49%);
- Increases in coastal pollution – 27 FGDs (35%);
- Improved communications – 21 FGDs (27%);
- Increasing competition – 20 FGDs (26%)
- Increasing coastal development – 19 FGDs (25%);
- Decline in fish varieties – 16 FGDs (21%).

These figures accentuate the trends shown for all stakeholder groups in the previous analysis.

The importance attached to **changes in seasonality and weather patterns** is particularly notable. A key activity during the FGDs was the discussion of seasonal patterns in people's livelihoods, largely as a means of exploring the different elements in stakeholders' livelihoods (no attempt has been made to generate some kind of "generalised" seasonal patterns in fisheries). However, this did provide an opportunity for many stakeholders to comment on how these patterns have changed over time and, in extreme cases (such as FRP boat and traditional craft operators in Kancheepuram District) to point out how the term "seasonality" is now widely regarded as of limited relevance given the uncertainty of seasonal patterns and weather. As some fishers put it, the seasonal calendar they had developed for FIMSUL's partners represented a "memory" of how it used to be rather than a reflection of current reality. This has clearly introduced an additional level of uncertainty into the livelihood activities of fishers and post-harvest operators, something that seems to be reflected in their concerns for the future discussed below.

Increasing levels of coastal pollution and **coastal development** are noted by an important number of fisher FGDs. As will be seen later, this tends to be a major issue in specific areas, although one of increasing concern everywhere. **Improved communications**, with the introduction of radios and cell phones, are an important change for fishers as they permit fishers to have information about landings, the whereabouts of potential buyers and fish prices and, coupled with improved mobility through bigger engines, this enables them to land fish at the best location and time.

Adaptive strategies

Among fisher FGDs, the focus on **technological upgrading** (75%), **higher levels of indebtedness** (52%), adapting fishing operations by **changing areas of fishing** (56%) (often including more fishing further offshore), **diversification of fishing effort** (36%)(by purchasing more different types of nets) and **scaling up operations** (36%)(through purchase of larger craft and more powerful engines) is by far the dominant set of strategies adopted to deal with change. **Government schemes**, largely as a means of accessing these technical options, were also mentioned by 20% of fishers.

Interestingly, while less widely referred to than these more technical options, between 13% and 16% of fisher FGDs consistently mentioned various organisational and cooperative strategies as playing a role in their capacity to cope with change – **SHG membership** (16%) and **working through associations and *sangam*** and **increased cooperation with peers** (14%). **Livelihood diversification** and **migration** were strategies mentioned by just 13% of fisher FGDs.

Supporting and inhibiting factors

Access to appropriate technology and **availability of informal credit** are seen as key for supporting adaptive strategies while it is also significant that the **role of supportive government action** (23%) is relatively widely recognised. Also significant is the role recognised of a cluster of factors related to social capital – **supportive neighbours, friends and relatives** (22%), **unity and cooperation within the community** (21%) and supportive associations and organisations, including unions and *sangam* (18%). The **role of NGOs** as supporting factors was also highlighted by 21% of fisher FGDs.

Box 6 : Steady improvement in fishing activities in Pudhupattinam, Pudukottai District

RM tells that her husband, RJ, really took a step forward in his fishing activity when he purchased a new net for kanavai or squid fishing. Because this was a more export oriented fishing activity he was able to increase his earnings to the point where he could replace his old vathai, or dingy, with a proper FRP boat and now she feels that her family is able to make a decent living. They've been able to construct a new house and at least some of their children are studying. She thinks her proudest moment was when her daughter got top marks in her class in 10th standard.

Source : Household interview by DHAN Foundation team – 09/02/2011

Among the key factors identified as inhibiting fishers' capacity to adapt to livelihood change, **rising investment and costs** seem to be regarded as by far the most important, mentioned by 35 out of 77 FGDs (45%). **Overcrowding and competition**, both at land and at sea, were also regarded as important (26%).

While the **decline in fisheries resources** already identified as a key change affecting livelihoods was also mentioned as an important inhibiting factor for adapting to change in general by 23% of fisher FGDs, some more specific aspects influencing this were also highlighted – the widespread use of what are perceived as **destructive and unsustainable fishing methods** (22%) and **degradation of the coastal and marine environment** (18%).

Given the importance of access to new technology highlighted as a key supporting factor, it can be regarded as significant that the **limits in coverage of government schemes and subsidies** were identified by 18% of fisher FGDs as a constraint. This partly referred to the extent to which subsidies are available for upgrading technology, and partly to access to various forms of welfare payments to support fishers' livelihoods.

5.2.2 FRP boat owners

Key livelihood changes

FRP boat owners, who in most areas seem to constitute probably the largest single stakeholder group in fisheries, were involved in 19 FGDs out of the total 159, with at least one group being covered in each district (with the sole exception of Tiruvarur District) and in Puducherry and Karaikal.

The identification of **declining catch** as a key change was even more marked for this group than for fishers in general, with 74% of FRP boat owner FGDs mentioning this change. Significantly, **changes in technology and access to technology** were identified by a similar number of these FGDs (74%) while the consequent **changes in operational patterns** were mentioned by 68%. Among specific technological changes, **improved communications** were particularly important for 37% of FRP boat owners FGDs.

Special attention was also given to **changes in seasonality and weather patterns**, highlighted by 58% of FRP boat owners. Significantly, **coastal pollution** and **increasing coastal development** (both 47% of FRP boat owners) also preoccupied a higher number of people among FRP boat owners.

Adaptive strategies

Among FRP boat owners, the key strategies adopted to deal with change are similar to those among fishers as a whole – **upgrading technology**(79%), **changes in fishing and operations area** (63%), **increasing use of loans and advances** (42%), particularly from market intermediaries, and **changes in location and organisation of operations** (32%) with **scaling up or intensification of operations** (42%) particularly important and **upgrading of skills and training** (32%) particularly important.

The most significant variation compared to responses for fishers as a whole is the apparent greater importance of **cooperation among fishers** (21%) and of **lobbying or protesting with relevant institutions** (21%) as a part of their coping strategy.

Supporting and inhibiting factors

The factors that support FRP boat owners in adapting to change mirror, to a large extent, those identified by fishers as a whole, with **access to technology** (79%) and **access to informal credit arrangements** (37%) the most widely identified. **Supportive NGO action**(32%) was particularly important for this group along with **links with intermediaries** (26%) and **government subsidies for equipment and operation** (26%).

As noted for their adaptive strategies, FRP boat owners also identify a range of factors relating to their social networks – **unity and cooperation within the community** and **participation in SHGs** (both 16%) and **supportive associations** (11%) as supporting their capacity to change although these appear to be regarded as somewhat less central to their capacity to change.

Among the key inhibiting factors identified, apart from **rising investment and costs** (42%), concerns regarding **destructive fishing practices**, the **sustainability of the fisheries resource** and **degradation of the coastal environment** (all 32%) seem to be predominant concerns.

Discussion

As the dominant stakeholder group in the small-scale fishing sector, FRP boat owners are apparently firmly locked into the cycle of increased investment, technological upgrade and increasing indebtedness as they attempt to deal with higher levels of competition at sea and the decline of in-shore fisheries resources and the coastal environment. The importance of government support to enable them to maintain this seems to be marginally higher compared to fishers as a whole, perhaps reflecting the more limited access to investment capital for their operations compared to some other fishers. The importance of NGO support compared to fishers in general is also significant and reflects the close relations than many of this stakeholder group have developed with NGOs in the wake of the *tsunami* relief process, which effectively facilitated the passage of many fishers from older, traditional forms of fishing to the use of motorized FRP craft.

Box 7 : The advantages of FRP craft in Pudhuvannai, Chennai

RV was recently able to shift from fishing with his traditional kattumaram to fishing with a motorized FRP boat, making use of a government scheme that provided a 50% subsidy on purchasing the equipment and the subsidised fuel to run it. He feels that this has really made a difference in being able to support his large household of 18 people including his married children and their families. One key advantage is that he is now able to carry a range of different fishing nets that give him more flexibility in what species to target. He can also carry an ice-box to store his catch. As he is also getting old he appreciates the fact that there is less strenuous work involved in running an FRP boat compared to his old kattumaram and he can go considerably farther out to sea. Two of his sons help him with fishing and his wife sells dry and fresh fish, and he feels that their standard of living has generally improved, in spite of the challenges they face because of declining catch, competition at sea and too much pollution in coastal waters.

Source : household interview by PLANT team – 01/02/2011

It is worth bearing in mind that FRP boat owners, while facing many challenges, are probably the group of fisheries stakeholders who have seen the most significant **positive** changes in their livelihoods over the last decade and have benefited most consistently from the post-*tsunami* reconstruction process (see Box 7 below). This process greatly improved their fishing capacity, providing a significant upgrade to their levels of technology, the range of fishing gear at their disposal and their mobility and access to communications. Coupled with the improvements in fisheries and communications infrastructure in coastal areas, and the steady increase in demand for fresh fish, they are now able to take greater advantage of strong levels of competition among fish buyers at landings to obtain better prices for their catches and 16% of FRP boat owner FGDs report **improvements in their incomes and living standards**(although another 11% report **declining incomes**). Given that this same situation has apparently placed women involved in fish vending (who would often be wives or relatives of FRP boat owners) at a disadvantage, it is less clear to what extent relatively better earnings for FRP boat owners translate into better livelihoods at the household level.

The income levels reported by FRP boat owners during the FGDs would seem to bear out the fact that they are currently achieving levels of returns on fishing that are at least adequate (although clearly highly variable and seasonal).

5.2.3 Trawler owners

Trawlers owners participated in 11 FGDs during the FIMSUL Stakeholder and Livelihoods Analysis Process. As a group, trawlers owners occupy a position of importance in the fisheries sector in terms of control of fisheries production and influence that considerably exceeds their relative numbers. There are estimated to be between 6,000 – 7,000 trawlers currently operating between Tamil Nadu and Puducherry but these are currently estimated to account for over 46% of total fish catch in Tamil Nadu and 44% in Puducherry. In addition, it was frequently pointed out during the course of the FIMSUL activities that trawler owners, who are almost all members of the traditional fishing community, exert considerable influence as they often have closer relations to government institutions compared to other fisheries stakeholders and provide work opportunities for a large number of fishing labourers. As an illustration of this influence, the difficulties in conducting meetings where trawler owners participated together with other, less influential stakeholder groups was often pointed out as there is an observed tendency for less "powerful" fishing groups to be reluctant to express their opinions openly in the presence of trawler owners.

Key changes

As with most other fisher groups, trawler owners highlight declining catch as a key change (8 out of 11 FGDs – 73%), with increasing costs and investment also a key change (73%), along with changes in technology (64%). Other key concerns that distinguish this group from other fishers include **changes in fish prices** (36%), linked no doubt to the higher volumes of catch and their effect on local prices, and **increased regulation** of fisheries (27%). This seems to indicate that regulatory mechanisms currently in place, such as zoning for trawlers, limiting their access to in-shore waters and measures in some areas to limit fishing through alternating days fishing by trawlers and other types of craft, are felt more acutely by trawler owners who have to cover the higher costs of their craft compared to smaller-scale operators.

Adaptive strategy

The strategies used by trawler owners to deal with these changes are similar to those of other fishers. **Technology** plays a key role (91%), along with **increasing reliance on credit** and **increasing investment** (both 64%) to adapt **modes of operation** and **fishing areas** (both 55%) to increased competition and various forms of regulation. **Diversification of fishing techniques** (27%) was also mentioned in several areas.

Significantly, more trawler owners seem to consider **livelihood diversification** an option, identified by 18% of FGDs. **Cooperation and organisation with their peers**, through **trawler owner associations**, and **use of existing government schemes** were all identified as other elements in their adaptive strategies by 18% of trawler owner FGDs.

Supporting and inhibiting factors

Not surprisingly, with technological upgrades playing such a key role in their adaptive strategies, **access to appropriate technology** seems to provide a key element in support to livelihood adaptation for trawler owners, identified by 9 out 11 trawler owner FGDs (82%). **Informal credit access** is clearly the principal source credit (55%) while **community support and cooperation**, **supportive government action**, and **good relations with market intermediaries** were also indicated as important by 27% of FGDs.

Key inhibiting factors identified were, above all, the rising costs for both investment in fishing technology and fishing operations (73% of trawler owner FGDs). This is illustrated by the case study in Box 8 from Puducherry. Not surprisingly, the fact that **government schemes and subsidies** do not completely cover these rising costs was also identified as an issue (27%).

Box 8 : The rising costs of trawling at Solainagar, Puducherry

The trawler owners of Solainagar were able to come up with a long list of fish species that they describe as having "disappeared" from their catches and are worried by the decline in catches that they are experiencing. Compared to the past, they are often targeting a different range of fish types and, in order to do this, they have diversified the number of nets they work with and now might carry as many as 15 different types of nets on their boats. Clearly, this increases the investment costs of their operations and they have higher costs for maintaining and procuring nets. In addition, they are also fishing further offshore in deeper seas in order to avoid overcrowded inshore waters where catches are now minimal. This requires bigger boats and bigger engines that use more petrol driving up their costs both for investment and operation. Solainagar trawler owners say that, while the rising prices they receive for their catches have helped them to adjust, their levels of indebtedness have significantly increased and reduced the viability of their activities.

Source : Focus Group Discussion by FERAL team – 24/01/2011

Discussion

Trawler owners, operating at a more commercial level with large investments involved in their fishing operations, are, not surprisingly, particularly concerned about the rising costs of their operations. It would seem that the expansion in the FRP fishing boat fleet, and the greater organisation of other fishing groups to lobby institutions and encourage some level of regulation of trawling effort, has had considerable impact on trawler operations which, in the past, seem to have been able to largely ignore formal regulations on their operations and had considerable flexibility regarding where and when they fished. Recent conflicts regarding fishing, mainly by trawlers, in Sri Lankan waters, where trawling is currently banned, has further complicated matters for this stakeholder group and this may be one of the forces influencing a greater interest in diversification into other businesses and livelihood activities.

Clearly, trawler owners represent one of the few fish stakeholder groups probably able to mobilise sufficient resources to be able to change their business, and invest in the technology and skills required to do so.

5.2.4 Traditional craft operators

The owners and operators of a range of traditional craft, including *kattumaram*, FRP *kattumaram*, country boats, and wooden *vallam* and *vathai* (specifically in the Palk Bay and Gulf of Mannar areas) have been looked at as a group and include 13 FGDs conducted throughout the coast. There is considerable overlap between this group and the larger stakeholder group of FRP boat owners and fishing labour. Many FRP boat owners may also be involved in fishing with older traditional craft on a seasonal or occasional basis and many labourers from the fishing community working on both trawlers and FRP boats may also have *kattumaram* or work as labour on other traditional craft for some part of the year.

Significantly, some FRP boat owners also reported a greater reliance in recent years on seasonal *kattumaram* fishing as a means of cutting costs during seasons when fishing operations with larger craft were likely to be uneconomical.

Key changes

The perceptions of key changes indicated by traditional craft operators were broadly similar to those identified by FRP fishers, although **declining catch** was given even more emphasis being identified by all (100%) the 13 traditional craft operator FGDs contacted.

Technological change, in the form of different nets, use of outboard motors and communications equipment, is clearly extremely important even for these fishers, identified by 11 out 13 FGDs (85%) and, consequently, the **increased costs and investment** involved were also important (63%). **Increased competition, changes in operation patterns** and **changes in seasonality and weather** were all identified by similar proportions to other fish groups (46%) while **increasing coastal pollution** was important for 31% of this group.

Adaptive strategies

The adaptive strategies adopted by traditional fishers show similar patterns with **increased use of loans and advances** (64%), **upgrades in technology** (57%), **changes in fishing areas** and **diversification of fishing methods** (50%) all playing an important role in adapting to livelihood change.

One of the more surprising features for this group was the importance given to **diversification of livelihoods** outside of fishing, which was identified by 43% of the FGDs as an adaptive strategy. This may indicate that this group feel that their opportunities for successfully competing in fisheries are limited and therefore, unless they can make the jump to purchase and operate larger vessels such as FRP fishing craft, their future in fisheries is limited. It may also be that, given the lower incomes generated through traditional fishing operations, many of this group are already involved in more diversified livelihood strategies.

Supporting and inhibiting factors

While **reliance on informal credit** (69%) and **access to appropriate technology** (62%) are important supporting mechanisms for their adaptive strategies, traditional craft operators also place greater emphasis on the importance of supportive neighbours and friends, identified by 38% of FGDs.

What are perceived as **destructive fishing practices** are identified as the single most important inhibiting factor (38% of traditional craft operator FGDs) while **limited access to credit, limited coverage of subsidies and schemes from government**, and overall **fisheries resource decline** are all identified by 31%.

Box 9 : Learning the hard way about declining inshore fish resources in Samanthanpettai, Nagapattinam District

Like many others in the pattinavar fishing community, AJ has been fishing since he was a child. His great desire was always to own his own fishing craft but a series of family misadventures and expenses meant that he was never able to acquire one like most of his neighbours and friends. His wife was seriously hurt during the tsunami disaster in 2004 and he had to spend considerable amounts on treatment for her. While he and his family benefited from provision of a pukka house as part of the tsunami relief effort, he still had no craft. Finally his brother-in-law helped him to purchase a wooden kattumaram and fishing nets and he was able to start fishing for himself. He used them for few days, but unfortunately he got no catch in the shallow water. He patiently waited for several months for the season for fishing in inshore waters to change but still got almost no catches. As he says: "I realised the hard way that shallow water fish resources have been destroyed by trawling and ring seine operations and the use of advanced technologies. Now my kattumaram and nets are idle". Finally he took a decision to learn deep sea fishing and is now working on board trawlers and gill net boats operating out of Nagapattinam.

Source : Household Interview by SIFFS team – 25/02/2011

Discussion

With access to fewer options and less mobility compared to those operating FRP fishing craft, these traditional craft operators are clearly more vulnerable to the changes that they perceive in the sector and the level of consideration they give to significant livelihood change, including leaving the sector or at least diversifying into other areas of activity is particularly significant. At the same time, bearing in mind the significantly lower levels of income mentioned by many of this group, their capacity to invest in new activities is also more limited and, while they command important fishing skills, these are rarely easily transferable to new spheres of activity. The most frequent strategies among *kattumaram* fishers to deal with the decline in earnings from near shore fishing appears to be to combine their normal fishing activities with work as fishing crew on FRP boats or trawlers (see Box 9).

5.2.5 Fishing crews

17 FGDs were conducted with fishing crews, including both crews on FRP craft and trawlers as there is apparently considerable mobility between the two.

Key changes

Among this group, the perceptions of key changes largely followed those for FRP boat owners with concerns about **declining catch** and **changes in technology** (both 10 out of 17 FGDs – 59%), **changes in seasonality and weather patterns**, **increased costs and investment**, and **changes in operation patterns** (47%) are all important.

For this group, **improved access to education and health care** were also noted as an important change by 24% of the FGDs involved. It is also significant that 18% of these FGDs indicated that they had experienced **improving incomes and living standards**.

Adaptive strategies

In terms of their adaptive strategies, a similar pattern to other groups was also highlighted, with the principal distinguishing strategy being relative importance given to **working through associations and *sangam***(24%). This seems to indicate the increasing importance and influence of unions and other forms of association in representing the interests of labourers and that these seem to have had a positive effect in supporting improved conditions of work and retribution.

Supporting and inhibiting factors

Apart from **access to technology**, identified by 76% of fishing crew FGDs, **group and community cooperation** were highlighted as important supporting factors by 35% and **supportive associations and unions** by 29%. Among the social relations that play a supporting role for fishing crew, the role identified for **supportive employers** (24%) is worthy of note, emphasising the extent to which fishing operations, particularly on FRP craft but also on trawlers, are closely linked into the social networks within the fishing community.

Inhibiting factors that are given salience include **overcrowding and competition** and **uncertainty in weather, currents and sea conditions** (29%), and **fisheries resource decline** (24%). Fishing labourers also emphasise the negative impacts of **dominance and interference by powerful individuals and interest groups (**24%).

Discussion

While fishing crew are clearly highly dependent on the performance of the boats on which they work, they seem to have generally benefited from increasing levels of organisation with associations and unions that appear to have played a role in ensuring better livelihoods for them. Box 10 below shows one case from Thoothukudi District of how one particular leader of fishing crew on trawlers has been active in organising them and achieving improved working conditions. In contrast to this particular account, it is also clear that fishing crew in the sector often identify closely with the interests of the owners of the craft on which they work, emphasising the cooperative nature of fishing operations.

Box 10 : Organising fishing crew members on trawlers in Poopalarayapuram, Thoothukudi District

PB, aged 40, is a vibrant fisher leader who has the ability and capacity to organize the crew on trawlers and to fight together for their rights and privileges. Before coming to Thoothukudi in the year 2005, he was the leader of the trawl boat labourers association in Visakhapatnam where he worked for the rights of fishing crew with the owners of the trawl boats. After coming to Thoothukudi, his experience and association with the trawler crews won him many supporters and friends among the crews working in the Thoothukudi area and he started organizing them and infusing in them the confidence and a sense of solidarity to fight for their rights. He brought all the trawler crews under one association and helped them to voice their demands to the owners of the trawl boats with a unified voice. Working together with other functionaries of the trawl boat labourers association,he pressurized the trawl boat owners to increase the crew share from 35% to 39% of catches, an improvement that they say has significantly improved crew members' living conditions. He continues to work to win other improvements for the conditions of trawler crew along the Thoothukudi coast.

Source : Household Interview by TMSSS team – 06/02/2011

5.3 The livelihoods of post-harvest operator stakeholder groups

5.3.1 Post-harvest operators

42 of the 159 FGDs were made up of **post-harvest operators**, a group including those involved in fresh fish handling and vending, dry fish processing and a range of other market actors including merchants, traders and agents.

Key changes

While the **decline in fish catch** was also the most widely identified change identified among this group, **increasing competition** in the market for fish was also identified as being a key change. The principal changes identified by this broad group were:

- Declining catch – 28 out of 42 FGDs (67%);
- Increasing competition – 24 FGDs (57%);
- Changes in seasonality and weather – 21 FGDs (50%);
- Increasing costs and investment – 18 FGDs (43%);
- Changes in fish prices – 16 FGDs (38%);
- Changes in technology and access to technology – 14 FGDs (33%);
- Improved transport – 12 FGDs (29%).
- Adaptive strategies

Among post-harvest operators, this cooperative element seems to assume more importance. 33% of post-harvest operator FGDs mentioned **increased cooperation** with their co-workers as a strategy for dealing with change. This is often perceived as a cost-cutting measure, given that the need to **increase investment** (35%) and make **greater use of loans and advances** (63%) is apparently as important for those in the post-harvest sector as for fishers. **SHG membership** (21%) is perceived as a slightly more important option for post-harvest operators, although, as seen in the area-based analysis, this seems to depend considerably on levels of exposure to this particular form of organisation.

Supporting and inhibiting factors

While **access to informal credit arrangements** was the single most important supporting factor identified by post-harvest operators in general (40% of FGDs), the importance of **transport facilities** (38%), **supportive networks with producers and service providers** (such as transport providers) (36%)was also highlighted along with **positive market conditions** and the **strong demand for fish** (31%).

In addition, the important role of social relations was emphasised through the identification of **cooperation within the community** as an important factor by 26% of post-harvest FGDs, along with **stable relationships with clients and customers** (26%), **membership of SHGs** (21%) and **supportive neighbours, family and friends** (19%).

Key inhibiting factors included **rising costs** (43%), **uncertainties in the market** (33%) and **limited access to transport** (24%).

Discussion

Particularly among women involved in fresh and dry fish vending, **increased dependence on loans and advances** was even higher than among fishers (68% and 64% respectively) and clearly the opportunities for technological improvement are more limited (26% and 27%). However, for fresh fish vendors in particular, **making use of new infrastructure**(63%), particularly improved transport and market facilities seems to play an important role in adapting to change. Significantly, various means of **increasing cooperation with their peers**, whether through organising cooperative marketing arrangements or sharing transport facilities is also mentioned as particularly key in their responses (37%). Larger scale agents and traders seem to rely more on **adjustments in pricing** as a means of dealing with changes (57%).

5.3.2 Fresh fish vendors

18 FGDs were held involving fresh fish vendors As with FRP boat owners, this particular group merits attention because of members of this stakeholder group are found everywhere along the coast and include a considerable proportion of fisher households. Almost all the members of fresh fish vending FGDs were women, with a large proportion of the women involved being related to fishers involved in fish harvesting at sea. Only one fresh fish vendor FGD group, involved in bicycle and motorbike vending, was male.

Key changes

Among fresh fish vendor FGDs, **declining catch** continues to be a key change (63%). However other key changes noted by these groups reflect their engagement with the market. **Increased competition** is an important change for 63% of fresh fish vendor FGDs along with **increasing costs** (58%) and **changes in fish prices** (36%).

On the positive side, **improved communications** and **infrastructure** in coastal areas are noted, with **improved access to transport** playing a role in livelihood change for 37% of fresh fish vendors.

Significantly, among fresh fish vendors, 26% mentioned that they felt that their **incomes were declining**.

Adaptive strategies

Increasing indebtedness through accessing loans and advances is identified as the most important single adaptive strategy by fresh fish vendors (68%) while making use of new infrastructure and transport facilities was also regarded as a key strategy (63%). Notably, **cooperation with other fish vendors** (37%) was often mentioned as a key element in adaptive strategies, particularly as a means of accessing better transport facilities and cutting the costs involved in doing this.

Diversification (or specialisation) of markets was also mentioned by 32%, with many fish vendors attempting to identify new, often "niche" markets where they can establish relationships with particular groups of clients and maintain some comparative advantage (for example one group of fish vendors in Nagapattinam were targeting local hostels and hotels for direct sales of fresh fish).

Making use of **SHG membership** as a means of accessing a new source of loans was also important for many of this group, mentioned by 26% of fresh fish vendor FGDs.

Supporting and inhibiting factors

In terms of support to adaptive strategies, **access to transport facilities** was identified as a key element (61% of fresh fish vendor FGDs). **Stable** and **supportive relationships**, both **within the community** and **with customers and clients** were seen as key (33% for both) and strong links with **other market intermediaries and with producers** were also important (22%).

Rising costs and **limitations on access to new infrastructure and transport** were important inhibiting factors for 56% and 33% of this group respectively.

Discussion

Given the considerable increase in the numbers and diversity of actors involved in fish marketing, the increasing competition noted by many post-harvest actors, and the inherent disadvantages in terms of access to capital and mobility that many female fresh fish vendors experience, the perception among fresh fish vendors that their incomes are in decline is understandable and is supported by approximate calculations of income provided by fresh fish vendors during the FGDs. This indicates that earnings among fresh fish vendors are relatively low (although there are clearly exceptions) and the impression overall is that this group is probably one of those suffering most in the face of declining catches and increased competition for access to fish. The case in Box 11 from Cuddalore District illustrates the fairly typical condition of extreme vulnerability that many fish vendors have to deal with. With the burgeoning demand for fresh fish from distant urban centres and export markets, and increased involvement of other market intermediaries often commanding better access to financial resources, it seems likely that locally based fresh fish vendors are "losing out" and facing intense competition, although clearly this rising demand has positive impacts on prices and can present some fish vendors with opportunities.

Box 11 : Coping as a widow in Tiruppapuliyur, Cuddalore District

SG has been a widow for 13 years after her *kattumaram* fisher husband died from the effects of long-term alcohol abuse. She has been a fish vendor in the local market for 22 years since she was 23 years old. Even before her husband's death her income from fish vending was the mainstay of the family economy because her husband rarely brought any money home. Her two elder sons have married and moved away and her third son is studying for his Engineering Degree at Annamalai University. Paying for his education is a major drain on her earnings and requires constant loans from money lenders but somehow she has managed. She notes that market vending is becoming more and more competitive and demands continually higher investment just to ensure that she has some fish to sell.

Source : Household Interview by FERAL team – 15/02/2011

The flexibility of many of these fresh fish vendors is impressive as they attempt to deal with this competition, but it is clear that, at the landing site, and in spite of their close links with many fish harvesters who may be relatives or husbands, their capacity to access fish is under pressure. The case in Box 12 illustrates the adaptive capacity of women fish vendors in spite of the frequent social barriers they encounter to taking up fish vending and the practical issues they face once they are in the profession.

Another significant feature encountered particularly during some of the Household Interviews with fresh fish vendors is the fact that, while fish vending is a traditional occupation for women in the fishing community, it is not an activity that is always viewed with favour even among the wives and female relatives of fishers. Several cases were recounted where women within the community faced opposition from their husbands, their family members and even neighbours when they decided to take up fish vending out of economic necessity.

Box 12 : Keeping mobile to support the family in Ganeshapuram, Thanjavur District

MA started out in life as a teacher in Thoothukudi District but moved to Chennai with her husband after they got married. There her husband started working on fishing boats to make ends meet, in spite of considerable opposition from his relatives who considered it a low status occupation for the *nadar* group to which they belonged. Eventually, the family moved to Ganeshapuram where her husband set up his own fishing activity and also did some fish trading on the side. After his death, MA took up fish vending and auctioneering in order to support their family of 5 daughters. She has been successful in fish vending but has had to be highly mobile in order to make it pay with the areas where she sells her headloads of fish being more than 32 kms away from her home. In spite of being busy with fish vending, MA has still found time to use her teaching experience to teach some of her fellow workers to read and write. As some of them said: "*We never went to school but because of her we still know how to read and write*".

Source: Household Interview by SIFFS team – 26/01/2011

5.3.3 Dry fish processors and vendors

11 FGDs were held with dry fish vendors and processors, who seem to be among the poorest members of the fishing communities, with this activity frequently being dominated by older women and widows. While dry fish processing and vending seems to be in decline, with the rising demand for fresh fish, this group illustrates well the position of the poorer sections of the fishing community.

Key changes

Dry fish vendors highlight essentially the same key points as fresh fish vendors although some aspects are accentuated. As with fresh fish vendors, **declining catch** was a key change, identified by 64% of dry fish vending FGDs.

Adaptive strategies

Cooperation with other vendors is identified as even more important for this group (55%) as an adaptive strategy and there seems to be an even greater reliance on **SHG membership** (36%) compared to fresh fish vendors.

18% of dry fish vendors regard **diversification of their livelihoods** as an important strategy.

Supporting and inhibiting factors

The importance of **SHGs** as representing an alternative **source of loans** and also a source of group

Box 13 : Struggling against alcoholism in Pamban, Rameswaram District

The experience of ES is a testament both to the disastrous effects of alcohol in many fishing communities, the vulnerability of people dependent on dry fish trading, but also the resilience of women in fishing communities in the face of adversity. Both her husband, who abandoned her 12 years ago, and one of her sons who works on the trawlers in Rameswaram, are addicted to alcohol and have rarely contributed to the family's livelihood. As a result, it is only through ES' efforts with dry fish selling that the family has continued to function. She managed to get her daughter married and was able to continue her fish vending activities with the support of her father and, more recently, through joining a Self-Help Group that has given her better access to loans to support the business. However she has had to deal with repeated disasters that have made it difficult to continue. Some years back she lost Rs. 50,000 of her stock when it was washed away by high seas from the tent where she kept it on the shore. Later another Rs. 25,000 worth of her dry fish was burnt in a fire at the dry fish yard she was using. As a result her levels of indebtedness to moneylenders are high in spite of the support she receives from other sources.

Source : Household Interview by DHAN Foundation team – 22/02/2011

cohesion and support is highlighted as they are identified as being the single most important supporting factor (45% of dry fish vendor FGDs).

Unity within their stakeholder group and the community, **availability of informal loans**, **supportive links with producers and market intermediaries** and with **neighbours and relatives** are all important supporting factors identified by 36% of this group.

Discussion

The particularly vulnerable nature of dry fish vendors and processors as a group seems to be confirmed by this analysis. Their range of options is limited and they face intense competition in accessing appropriate fish to support their trade. Demand for their product is apparently weakening and the increasing preference in the market for fresh fish (especially in urban and export markets) makes it particularly difficult for them to sustain their activities. The income levels indicated during the FGDs by this group are among the only ones among all stakeholder groups that correspond closely to the absolute poverty levels for India.

5.4 The livelihoods of service provider stakeholder groups

Participants from 22 FGDs came from **stakeholder groups involved in providing services** to the fisheries sector. This group is treated separately as, at least in some cases, their exclusive dependence on fisheries is less although many of them are also members of the traditional fishing community. They include engine mechanics, boat builders and repairers, ice producers and sellers, net vendors and repairers, and those involved in transporting fish. Not surprisingly, for this group, access to technology seems to assume a relatively higher importance in relation to change as they are clearly concerned with how changes in technology affect both the services they provide and demands from other people in the sector.

Key changes

Key changes identified by this group included:

- Changes in technology and access to technology – 15 out of 22 FGDs (68%);
- Declining catch – 12 FGDs (55%);
- Increased competition – 9 FGDs (41%);
- Increased costs and investment – 8 FGDs (36%);
- Changes in operational patterns – 7 FGDs (32%);
- Changes in seasonality and weather – 6 FGDs (27%).

Adaptive strategies

Among service providers, **upgrading technology** is by far the most dominant strategy for coping with change, identified by 17 out of 23 service provider FGDs (68%). **Livelihood diversification** is an important option for this group, identified by 32%.

Box 14 : Learning the boat building trade in Muttom, Kanyakumari District

RJ started out working as a labourer in a boat yard when he was 17 years old. By carefully applying himself to learning the tricks of the trade he has successfully risen to owning his own boatyard where he employs 30 workers and has acquired a reputation as a reliable boat producer in the area. He has easily made the transition from building wooden boats to constructing good quality fibreglass craft. He is constantly looking for new ways of making his business more efficient and profitable. He says: "*As the cost involved in manufacturing keeps climbing year after year, advance building of moulds, with bank loans, would be a clever and frugal way forward*". One of his other concerns is how to reduce the health hazards involved in working with fibre glass which means that everyone involved in the trade ends up spending a lot of money on medical treatment and lost working hours.

Source : Household Interview by SIFFS team – 24/02/2011

Supporting and inhibiting factors

The strength of market demand (36%) is, not surprisingly identified as a key supporting factor, along with **access to appropriate technology** (36%), **access to informal credit** (28%) and **stable relationships with clients** (24%).

Organisation into associations (20%) also seems to play an increasingly important role.

Rising investment costs (36%) and **shortages of skilled labour** (16%) are among the inhibiting factors identified most widely.

Discussion

Many of the groups that provide services to the fisheries sector have the advantage, compared to fishers, that their skills and services are not necessarily restricted to fisheries and they seem to have greater scope for diversification compared to fishers and post-harvest operators. The entrepreneurial spirit shown by some of the people in these stakeholder groups is significant, as illustrated by the case in Box 14 from Muttom in Kanyakumari.

5.5 The livelihoods of all-female stakeholder groups

35 of the 159 FGDs were made up exclusively of **women**. The majority of these were those involved in various forms of fish marketing and processing activities, but two of FIMSUL's partners also held meetings with more diverse groups of female members of Self-Help Groups.

Key changes

Not surprisingly, the changes identified by these all-female groups reflect closely those identified by post-harvest operators in general, as there is significant overlap between these two groups. However, it is worth noting how all-female stakeholder groups appear to give more emphasis to changes in the environment, particularly weather and seasonality patterns compared to post-harvest operators in general.

The key changes noted by **all-female FGDs** are:

- Declining catch – 23 out of 35 FGDs (66%);
- Changes in seasonality and weather – 19 FGDs (54%);
- Increased competition – 17 FGDs (49%);
- Increased costs and investment – 14 FGDs (40%);
- Changes in fish prices – 12 FGDs (34%).

Adaptive strategies

As with many other groups, and particularly taking into account women's involvement in fish marketing activities, the importance of **increasing use of loans and advances** (63%) as an adaptive strategy for women is not surprising. Taking all-female FGDs, the **importance of cooperation with peers** (16 out of 36 FGDs - 46%) and **participation in SHGs** (31%) is also more marked compared to other male-dominated stakeholder groups.

Supporting and inhibiting factors

A **supportive community and group environment** plays a particularly important supporting role for women and was identified by 37% of all-female FGDs. **Access to transport** was also key to support their marketing activities (27%) and the **role of SHGs** as supporting mechanisms was also emphasised (34%).

Rising costs (41%) and **limitations in access to transport** (24%) and **capital** (21%) were identified as key constraints on adaptation.

Discussion

The difficulties and obstacles faced by women involved in economic activities in fishing communities mean that they are particularly reliant on good supporting networks among family, neighbours and friends. Many of the fresh and dry fish sellers involved in both Focus Group Discussions and Household Interviews during the course of the FIMSUL field work told stories of how they were only able to overcome crises because of close support from relatives or other women in the community. The case study in Box 15 illustrates such a story.

Box 15 : Supportive womenfolk in Tiruvallur District

LS was born in Chennai into a poor family but settled in the Pulicat area after her marriage. Her husband was a hard-working *kattumaram* fisherman but his habit of consuming alcohol daily gradually got the better of him and he increasingly forgot his family until his death just before the birth of their second child. LS's married life did not even last for 3 ½ years. LS then decided to carry on living with her parents-in-law so as to ensure that her children would be able to inherit from their father's family, but this meant that she had to accept living almost as an unpaid servant in her late husband's family. The fishing community in which she lived was strongly opposed to women going out of the house to earn money, so she was unable to do much to improve her family's plight until she learnt tailoring from her neighbours and started earning a little money from that. She has been able to get her daughter educated up to higher secondary standard and she says that education for girls is critical to "*help them act wisely in difficult situatio*ns". LS says that the support of her own mother and of other women in the community was critical in helping her to get through the challenges she has faced. Now she has also joined several women's Self-Help Groups and this has strengthened her sense of solidarity with women in the community. It has also enabled her to get training from NGOs and the State Department of Fisheries so she has been able to improve her tailoring business and start running a catering unit to serve the tourists who come to Pulicat Lake. With this income, she was able to conduct her daughter's marriage without asking for money from anybody.

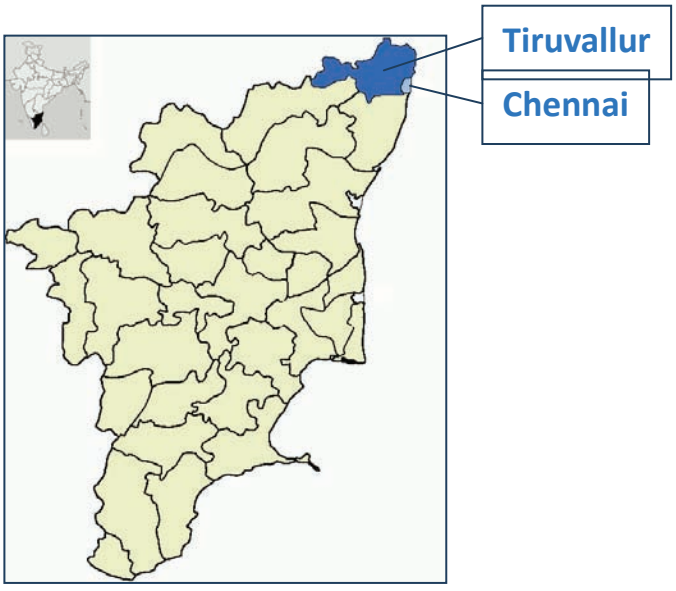
Source: Household Interview by PLANT team – 12/02/2011

The persistence of prejudices and negative attitudes to women involved in economic activities, such as fish vending, is particularly significant given the importance attached to these activities among those involved in them. One of the most striking features of the case studies collected through the Household Interviews was the frequency with which male heads of household mentioned the crucial role played by their wives in providing economic support for the family during times of difficulty or crisis. In spite of this key role, several cases were encountered where women had faced considerable opposition from family and neighbours before they were able to take up activities that involved them working outside of their homes.

6. Area-based Characteristics of the Livelihoods of Fisheries Stakeholders

Across the 8 areas covered by FIMSUL's partners, while the dominant changes remain essentially the same as those highlighted in the overall analysis – **declining catch**, **changes in technology** and **costs and investment** levels, accompanying **changes in operational patterns**, and **changes in seasonality and weather patterns**, the emphasis given to some of the other issues varies considerably. This reflects important differences between these areas – differences in fisheries resources and people's patterns of exploiting those resources, in the economic and social context of fishing and fishing communities, and in the broader patterns of change and development seen in these different areas.

6.1 Tiruvallur and Chennai Districts



21 Focus Group Discussions were held in Tiruvallur and Chennai Districts in which 250 different fisheries stakeholders participated.

Key features and trends in Tiruvallur and Chennai Districts

Tiruvallur District is the northernmost district of Tamil Nadu and borders directly with the neighbouring state of Andhra Pradesh on the north, and the districts of Chennai, Kancheepuram and Vellore on the south and western sides. The district covers an area of 3,424 km^2 and has 55 km of coastline. Particularly important in terms of fisheries in the district is the 25.7 km^2 of brackish water largely made up of Pulicat Lake on the northern border of the district. There are 58 fishing communities and 27 landing sites along the coast.

Chennai District, located immediately to the south of Tiruvallur, has an area of 178.2 km^2 with 25.6 km of coastline, 40 hectares of estuaries and brackish waterand 44 fishing communities.

As in the rest of the Coromandel Coast, marine fishing in Tiruvallur and Chennai is dominated by fishers from thePattinavar caste, but there is also important involvement of Irulatribes people, members of the Vanniyar caste and some other low caste groups in fishing in lagoon areas and backwaters.

Not surprisingly, the dominant feature of these two districts is the city of Chennai which represents both the capital of Tamil Nadu state and the largest centre of population and development in the region. While the population of Chennai itself has remained relatively constant over time at around 4.8 million people (growth over the last decade has been just 7.8%), expansion of the urban area into Tiruvallur District to the north and west of the city has been very rapid over the last decade and Tiruvallur District is considered one of the fastest growing districts in the state. According to the 2011 population census, the current population of Tiruvallur is over 3.7 million and has grown by over 35% over the last decade. Almost all of this growth has been in urban areas.

Chennai and Tiruvallur are key centres of economic growth in Tamil Nadu. A considerable proportion of the heavy manufacturing industry based in Tamil Nadu has historically been located across these two districts and the neighbouring district of Kancheepuram to the south. Over the last decade, much of the domestic and foreign investment in vehicle and heavy engineering has been focussed in this area.

Clearly these changes have created both opportunities for the members of fishing communities as well as challenges. Access to services, including water supply, energy, schooling and health facilities has greatly improved over the

past decade and fishing communities in the city also have a comparative advantage of direct access to a strong and growing local demand for fresh fish, as well as major fisheries export companies based in the Chennai city. The location of a major fishing port at Royapuram in the city is also important, as it provides opportunities for services in support of a range of fishing activities, from traditional craft to deep-sea fishing operations by gillnetters and trawlers. Fish supply is relatively constant as these operations at Royapuram draw in fish caught from all over the waters adjacent to Tamil Nadu as well as fish from the waters of neighbouring states, notably Andhra Pradesh, from where it is estimated that 60% of the Chennai trawler fleet's catch currently comes.

However, these developments have also had more problematic impacts on coastal communities in Chennai and Tiruvallur Districts. Coastal fishing communities in Chennai are heavily urbanised and, particularly with rising land values and pressure on space along the shoreline of the city, residential space for fishing households is extremely limited. Over the last decade, as urban and industrial development has increasingly spread northwards beyond the limits of Chennai District, similar processes are clearly underway in Tiruvallur District where the expansion of the Exclusive Economic Zone around Ennore, with its associated port facilities, industrial park and power generation infrastructure have directly impacted fishing communities resident in the area.

The coastal waters off Chennai and Tiruvallur have also been identified as pollution "hotspots" in the Database on Coastal Information of Tamil Nadu (prepared by Institute of Ocean Management, Anna University, Chennai, 2008). Not only do these coastal waters receive the domestic sewage from an urban area of almost 10 million people, but they are also heavily affected by industrial pollutants from the wide range of manufacturing industries in the area and fly ash from major power generation plants. Oil pollution is also generated by oil refining activities in Chennai and heavy shipping traffic around Chennai harbour.

In Tiruvallur District, changes in hydrological flows, degradation of the surrounding environment and increasing urbanisation are all reported to be having negative impacts on the fisheries environment of Pulicat Lake, an extensive brackish water area located on the border with Andhra Pradesh.

Key changes reported by fisheries stakeholders

Along with the key changes generally recognised across the sector, such as **changes in technology & access to technology** (48%), **declining catch** (43%), and **changes in seasonality and weather** (43%), the most important distinguishing factor regarding perceptions of change in this area is the importance given to **patterns of coastal development**, highlighted by 9 of 21 FGDs in this area (43%). This reflects the pressure felt by many fishing communities in the Chennai area and around Ennore as a result of major industrial developments in this area and the recent development of Ennore Port. Increasing coastal pollution is mentioned less frequently but is still identified by 19% of the FGDs as an important change.

Fisheries-related infrastructure is generally recognised as having improved in this area (38%) and other key changes include **changes in fish prices** and **changes in operation patterns** (both 33%), **increased competition** (29%) and **changes in traditional occupations** (24%).

Adaptive strategies

Key adaptive strategies for dealing with change in this area are dominated by **upgrades in technology** (62%) but, significantly, action to **lobby support from institutions** seems to be seen as an important part of coping strategies (mentioned by 9 out of 21 FGDS – 43%) with **work with associations** mentioned by 19% of FGDs in the same area.

Also significant is the importance attached to **diversification of business and livelihoods** (38%), perhaps reflecting the opportunities provided by vicinity to Chennai and the rapid pace of coastal development in this area.

Supporting and inhibiting factors

The importance of organisation in this area is highlighted by responses regarding supportive strategies, where **supportive associations and unions** are mentioned by 33% of FGDs, and **unity and cooperation with the**

community and groups by 24%. The importance of **supportive government action**, including **responsive government and local government agencies** is also significant, identified by 24% of FGDs in this area.

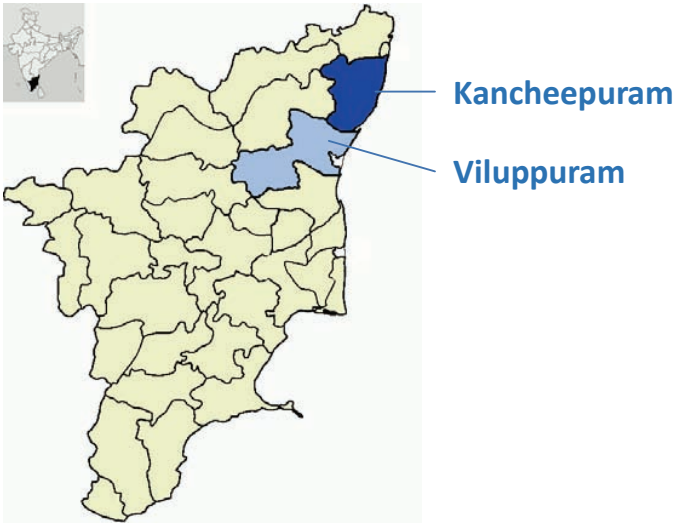
In terms of inhibiting factors, **interference by powerful or dominant groups** is highlighted (29%) and **inhibiting social pressures**, in the form mostly of failure to recognise the rights of fishing communities, was identified by 24%. This is also one of the few areas where traditional management measures are mentioned, with the **decline and limited coverage of traditional management measures** being noted as an inhibiting factor by 14% of those involved in FGDs.

Discussion

Clearly, proximity to a major urban centre such as Chennai creates both opportunities and distinctive problems for the fisheries sector in Chennai and Tiruvallur. On the one hand, access to institutions and markets is relatively easy. Organisation in the sector seems to be relatively strong in this area.

However, at the same time, competition is intense, both on land and at sea and the pace of industrial and urban development has placed both fishing communities and fisheries resources under pressure. The importance of effective representation and organisation is felt very strongly in this area.

6.2 Kancheepuram and Viluppuram Districts



21 FGDs with 230 participants were conducted in Kancheepuram and Viluppuram Districts.

Key features and trends in Kancheepuram and Viluppuram Districts

Kancheepuram District covers 4,432 km^2, bounded by Chennai and Tiruvallur Districts in the north, Vellore and Tiruvannamalai Districts in the west and Viluppuram District in the south. 53% of the district is urbanized, reflecting its vicinity to the Chennai metropolitan area. It has 43 fishing communities.

Viluppuram District, the fourth largest district in Tamil Nadu, has a total area of 8,204 km^2 with about 32 km of coastline with 19 fishing communities. It is bordered on the north by Kancheepuram and Tiruvannamalai Districts, Dharmapuri and Salem Districts in the west, Cuddalore District in the south and the Union Territory of Puducherry located in the south-eastern corner of the district.

Both districts are characterised by extensive lagoon areas where there is a long tradition of salt making, particularly at Kovalam and Cheyyur in Kancheepuram District.

In both districts, the fisher communities largely belong to the *pattinavarchettiar* caste, and largely to the sub clan of *periyapattinavarchettiar*. Other fisher groups found include the *chinnapattinavarchettiar* and the *pallis* (*parvatharajakulam*: who are basically inland fishermen who have moved to the coast) who also call themselves *naicker*. There are also two settlements of fishermen belonging to Muslim community. Some tribal groups known as *vanniars*, as well as some *dalit* groups living around lagoon areas, estuaries and canals near the coast are also highly dependent on fishing although this is limited entirely to these inland fishing areas and is generally carried out by hand or using very simple fishing gear.

Both Kancheepuram and Viluppuram Districts have been strongly affected by major changes over the past two decades. Kancheepuram in particular, due to its position immediately adjacent to Chennai city, has seen rapid growth in population in urbanisation as the development of the Chennai urban area overflows into the District. Decadal growth in Kancheepuram has been estimated at 38.7% (Census of India, 2011) making it the fastest growing district in Tamil Nadu in terms of population. The District is one of the principal areas for the rapid development of the IT industry in Tamil Nadu, with a succession of technology parks and accompanying residential areas being developed along the coastal belt. Kancheepuram has also seen very significant industrial development in the inland areas of the district over the last decade especially in the automotive and engineering sectors.

Viluppuram District has also grown significantly over the last decade although, at a rate of around 17% in terms of population, it has been less dramatic than the districts further north. In coastal areas of the district, as in Kancheepuram, housing schemes and tourism development has increased the value of coastal land and, particularly in the areas near Puducherry, brought about significant changes in the areas surrounding coastal fishing communities.

Figure 5 : Pressures on coastal areas in Kancheepuram and Villupuram Districts

A key development in the area has been the completion of the East Coast Road connecting Chennai with Puducherry which has connected the coastal areas of the districts to nearby cities, markets and services. Significantly, it has also opened up the coastal areas to a wide range of development activities, including housing, tourism and industrial development.

The importance of this single piece of infrastructure for coastal fishing communities cannot be over-emphasised. Prior to the completion of the ECR in 2001, the coastal communities of the two districts, particularly in the area from Mahabalipuram south to Puducherry were extremely isolated and remote and served only by small country roads. The fishing communities along this stretch of coast were particularly isolated and traditional, mainly involved in *kattumaram* fishing off the open beaches along this stretch of the Coromandel Coast. Just over a decade after the construction of the new road, the entire coastline has seen a high level of new development, with a variety of large housing schemes and technology parks either already constructed or planned for the future. Land values are reported to have increased significantly in recent years as demand for land for housing and for industry increases.

Key changes

Declining catch was identified very strongly by FGDs in this area as the key change affecting their livelihoods (95% of FGDs). This perhaps reflects the contrast between relatively small fishing communities along the Coromandel Coast dominated by small-scale operators and the presence of major fishing ports in the vicinity in Chennai and Puducherry in particular. Otherwise key changes identified were similar to those identified in other locations. While **increased coastal development** and **coastal pollution** are recognised as major issues in this area, they were specifically mentioned as key changes only by 10% of the FGDs.

Adaptive strategies

Key adaptive strategies here included **diversification of sources** used for accessing both fish (for post-harvest operators) and equipment(for fishers). **Technology upgrades** (43%), **changes in fishing and operations areas** (33%) and **diversification of fishing** (23%) were all important along with **increased dependence on loans** and **cooperation with peers** (24%).

SHGs, as a specific form of organisation, seem to have some importance in Kancheepuram and Viluppuram (18%). However, it would appear that in most cases the principal importance of SHGs lies in their role as an alternative source of credit at relatively advantageous rates of interest. Given the increasing importance of debt as a means of continuing with livelihood activities almost everywhere, the importance of having as wide a range of different potential sources of credit is clear.

From some of the household interviews, it was also emphasised how cooperation between men and women in the household has become increasingly important in ensuring a viable livelihood from fisheries in Kancheepuram and Viluppuram Districts. In Box 16, an FRP boat owner from Viluppuram District comments on this aspect of his livelihood.

Supporting and inhibiting factors

The **positive market conditions** in the area, **supportive NGO action**, and **supportive links with market intermediaries** (29%) were all mentioned as key supporting factors while key inhibiting factors included **destructive and unsustainable fishing practices** (24%), **rising investment and costs**, **limited coverage of subsidies and schemes** and **overcrowding and competition** (all 19%). **Interference by powerful individual and groups** was also mentioned as an inhibiting factor by 14% of FGDs.

Box 16 : Combining the efforts of men and women in Viluppuram District

GS, an FRP boat owner and fisherman, made the following comment about how he and his family manage to continue to operate as fishers. "*These days owning a boat will not ensure you a decent income; nor even if you go fishing regularly like me. The fish catch in gillnets is so limited these days. Only adding value to the catch somehow can save fishermen like me. My wife adds value by taking the fish to the market directly and getting the best price she can directly from consumers. This way we do not lose anything to agents or middlemen. Besides, our customers also get the best price. I am lucky that my wife is a fish vendor. Many women don't like to do it any more as it is a dirty job. It is sad that they feel that way, but that's the reality. Some way should be found so that the women can do fish vending without feeling that it is dirty*".

Source : GUIDE – District Report for Kancheepuram and Viluppuram Districts (FIMSUL, 2011)

Discussion

Kancheepuram and Viluppuram represent a very particular environment compared to other communities in Tamil Nadu. On the one hand, fishing communities here are relatively "traditional" and were quite isolated until the completion of the East Coast Road (ECR) in the last decade. On the other hand, they are bracketed on either side by major urban areas (Chennai in the north and Puducherry in the south), both of which are clearly having increasing impact on these communities. There is acute pressure on coastal living space as real estate and tourism developments increasingly dominate the area. The contrast between fishing communities restricted in their access to areas where they previously lived and a series of coastal developments apparently not affected by such regulations is clear to all.

The proximity of these two important urban areas also clearly creates significant market opportunities and the competition for fish from the communities along this coast is acute. Improved access to coastal villages has enabled fish traders from outside the communities to access fish landings and this has, on occasions, created difficulties for local traders. The story told by fish traders in Box 17 highlights the levels of competition experienced at fish landings and how one particular factor has been employed by local communities to deal with conflict over access to fish for sale.

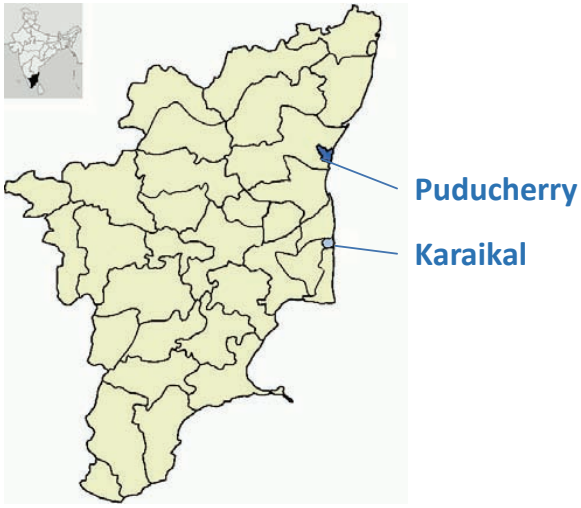
Box 17 : The advantages of women as fish auctioneers in Kancheepuram District

As fish landings decrease, there is more and more competition to get hold of the fish as soon as it arrives. Fish vendors from outside, who are more often men, are usually able to bid more at the auctions on the beach.If the local auctioneer is a man and shows any consideration to local women vendors, he will often be accused by outsiders as a result. But if women are playing the role of auctioneers, they are able to deal with this more tactfully and the male outsiders doing the accusing will hesitate because they are women. The women as auctioneers will generally show more consideration to their local sisters and every village should give priority to appointing women as auctioneers. This will also provide local roles for women. In the Kalpakkam cluster of villages, women are the majority as auctioneers."

Source : GUIDE – District Report for Kancheepuram and Viluppuram Districts (FIMSUL, 2011)

It is significant that, in spite of improved communications and proximity to areas of intense development, diversification out of fisheries-related livelihoods is not mentioned widely here at all. This may reflect the fact that the fishing communities along the coast of these two districts are still relatively "traditional" and consideration of alternative forms of livelihood activity is relatively recent and something that is affecting, above all, the younger generation who have had better access to education rather than those already involved in fishing.

6.3 Puducherry and Karaikal Districts



20 FGDs were involved in the process in Puducherry and Karaikal with about 195 participants from different stakeholder groups.

Key features and trends in Puducherry and Karaikal Districts

Puducherry and Karaikal Districts are both parts of the Union Territory of Puducherry. These areas enjoy union territory status as a result of the Treaty of Cession of 1956 when the four former French colonies located in India became part of India but were assured of maintaining their special administrative status. The Union Territory of Puducherry consists of four quite distinct districts: two, Puducherry and Karaikal, entirely surrounded by Tamil Nadu territory; Yanam, located in the Godavari Delta area of Andhra Pradesh; and Mahé situated in northern Kerala.

Puducherry District has an area of 293 km^2 with 24 km of coastline where there are 15 fishing communities. Karaikal District covers an area of 160 km^2, also with 24 km of coast and 10 fishing communities.

In Puducherry, the past decade has seen a growth of about 28% in the population with over 68% of the population living in urban areas. The expansion of the urban area has influenced fishing communities as land prices are reported to have increased, and the expansion of tourism, much of which is concentrated in coastal areas, is viewed with particular concern by fishing communities. Tourism is being actively promoted by the regional administration and this is perceived as placing coastal communities under the threat of losing their living space adjacent to the beaches on which they depend for their fishing activities.

In Karaikal, in addition to some tourism development, the past decade has also seen very significant industrial development along the coast. A major deep-water port was commissioned in Vanjore in 2009 and this currently deals primarily with cement and coal. Due to its small size and location, entirely surrounded by Nagapattinam District of Tamil Nadu, Karaikal District is clearly strongly affected by developments in neighbouring areas. Plans to greatly expand the power generation capacity from the area, mainly through the construction of coal-fired power stations, are likely to have significant impacts on the local environment and are causing considerable concern in coastal communities. These developments are also expected to have impacts on the quantities of coal being brought in through the Karaikal port and have localised impacts on the marine environment and air quality.

Fishers in both Puducherry and Karaikal belong predominantly to the Pattinavar caste of traditional fishers, with some members of non-fishing castes involved in service provision such as boat building and work as mechanics.

Figure 6 : Fishing, harbours and fishing communities in Puducherry

Key changes

The key changes noted in this area were not significantly different from those noted overall:

- Changes in technology and access to technology – 80%;
- Declining catch 70%;
- Changes in seasonality and weather – 60%;
- Increased costs and investment – 60%;
- Increased competition – 50%.

One potentially important factor noted here more than in other areas were **changes in local institutions and community unity** (30%),

Adaptive strategies

Adaptive strategies identified by FGDs in Puducherry and Karaikal reflected closely this emphasis in noting change.

- Upgrade in technology – 65%
- Increased use of loans and advances – 60%;
- Increased investment and costs – 45%;
- Increased cooperation with peers – 45%;
- Making use of new infrastructure and transport facilities – 40%.

Supporting and inhibiting factors

Not surprisingly, **access to technology** was the dominant supporting factor identified by 60% of FGDs with **community cooperation** and **supportive neighbours and friends** (45%) also key.

Rising costs (50%), **space limitations** and **market uncertainties** (both 30%) were the principal inhibiting factors identified.

Discussion

In Puducherry and Karaikal, fisheries stakeholders appeared to be particularly sensitive to changes **within** the fishing community over the past decade. These have included the weakening of traditional *panchayat* mechanisms side-by-side with the emergence of new forms of organisation within the sector, in the form of *sangam* and producer associations. Particularly in the wake of the post-*tsunami* relief efforts after 2004, many stakeholders highlight how the influence of the older generation of community leaders associated with the traditional *panchayat* arrangements has weakened as it was not always perceived to have operated in an even-handed way in handling relief resources. In some areas at least, a new generation of representatives, sometimes associated with political groups but also with producer associations within the fishing community, have now acquired greater recognition.

Box 18 : Women's unrecognised roles in fisheries livelihoods in Puducherry

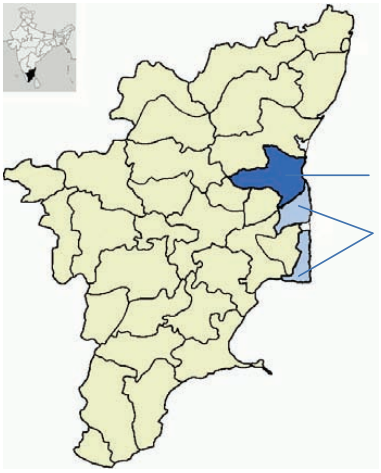
SM is a 48-year old fishing crew member who works on trawlers and FRP boats out of Veerampattinam. He explains how, as soon as he comes home from work, he hands over all his earnings to his wife and she practically manages the economy of the household. His wife then gives him back about Rs-20 – Rs.30 to allow him to buy a bit of drink that day. While he says that there is steady demand for labour in fishing in his area, he also mentions how critical his wife's work as a fish vendor is. As a trade, fish vending can be a bit erratic and the earnings are not so steady but they are still important to help the family get by and face important expenses like weddings of the children and education. KM, a *kattumaram* fisher from Solainagar, also tells how his wife's earnings from fish vending are particularly important in helping the family deal with lean season periods in fishing.

Source : Household interviews by FERAL team – 27.01 & 29.01.2011.

However, it was also highlighted how women in fishing communities continue to be under-represented in public forums in spite of an increasing recognition throughout the sector of the fundamental role that they play in sustaining the fisheries sector, and the livelihoods of the households who depend on it. This awareness seemed to be particularly marked in Puducherry.

Concerns regarding pressure on living and working space along the coast, with tourism and real estate developments, particularly around Puducherry, are also significant. There is widespread perception that the authorities are increasingly favouring a model of coastal development that will encourage the development of tourist resorts, entertainment centres and high-class housing developments and that this is likely to lead, in the long-term, to the alienation of fishing communities from the coastal areas. In this context, measures for coastal management are viewed with considerable suspicion as they are often interpreted as a form of leverage aimed at removing fishing communities from the coast to make room for other forms of development there.

6.4 Cuddalore and Nagapattinam Districts



28 FGDs were involved in discussions in Cuddalore and Nagapattinam Districts, involving 237 participants.

Key features and trends in Cuddalore and Nagapattinam Districts

Cuddalore and Nagapattinam Districts represent the final two districts of the Coromandel Coast section of the Tamil Nadu coastline. Cuddalore and Nagapattinam were the districts most severely affected by the 2004 *tsunami* disaster.

Cuddalore District has a total area of 3,678 km^2 with just over 57 km of coastline. It is bordered by Viluppuram District in the north, Perambalur District in the west, and Ariyalur and Nagapattinam Districts in the south. Along the coastline of the district there are 48 fishing villages and 28 landing centres. Figures from the District authorities give a total number of around 14,000 active fishers from around 12,800 fishing households. These fishers operate roughly 5,000 fishing craft of which around 900 are mechanised, 2,000 motorised (mostly FRP craft) and 2,000 non-motorised craft (mostly *kattumaram*). Population growth in Cuddalore has been moderate over the last decade at about 14% with over 33% living in urban areas. The total population of the district in 2011 was 2,600,880.

Nagapattinam District, located immediately to the south of Cuddalore, stretches along the final part of the Coromandel Coast up to Point Calimere and also includes a section of coastline facing southwards into Palk Bay. Nagapattinam has an area of 2,716 km^2 and a long coastline of roughly 180 km and is bordered by Cuddalore and Ariyalur Districts in the north, Thanjavur and Tiruvarur Districts in the west. Karaikal District of the Union Territory of Puducherry is located within the confines of Nagapattinam District. The southern part of the Nagapattinam coastline, around Point Calimere (which marks the southern end of the area known as the Coromandel Coast) and bordering on Palk Bay is characterised by extensive wetlands, mangrove areas and backwaters. The estimated population of the fishing communities in the district is about 40,000 and they operate over 1,100 mechanised craft, 5,400 motorised FRP boats and 2,700 motorised and non-motorised *kattumaram*. The population of the District in 2011 stood at around 1.6 million people of whom approximately 22% are urban-based. The rate of population growth in Nagapattinam is one of the lowest in Tamil Nadu at just 8.4% over the last decade.

Fisheries has long been regarded as a key sector in both Cuddalore and Nagapattinam, but recent industrial and infrastructural developments are changing this emphasis and the importance of both agriculture and fisheries in the local economies of these two districts seems to have declined in recent years.

Cuddalore has been the focus of intensive industrial development over recent years. Three major industrial parks have been developed: the SIPCOT part at Cuddalore, the SIDCO park at Semmandalam and the Neyveli Lignite Corporation park at Neyveli. These have attracted a series of chemical, pharmaceutical and paint industries. The SIPCOT industrial park in particular is located very close to the coast and fishing communities widely perceive that this is having impacts on both the coastal and marine environment. There are also considerable concerns over plans for new developments in the district, particularly in terms of power generation industries using coal.

Nagapattinam District has also seen significant industrial development along its coastline including a major coal-fired power plant, the WIMCO bromide extraction plant at Vedaranyam and the Mettur Chemical Plant. The delta of the Cauvery River located with the district has also been identified as an area of potential oil extraction which could have important impacts on the coastal fisheries environment.

The East Coast Road (ECR) has been completed in some sections in this area with others under construction and its eventual completion can be expected to have a significant impact on coastal fishing communities. Communications with many areas of the coast have already improved significantly as a result of improvements in association with *tsunami* relief activities and other industrial and port developments along the coast.

An important factor affecting fishers in this area, but particularly in Nagapattinam, has been the persistent security issues facing Indian fishing boats operating in Sri Lankan waters. Over the past decade, partly as a result of increasing competition in Indian territorial waters and, quite possibly, in response to declining resource availability locally, mechanised craft operating out of Nagapattinam (as well as other landing centres to the south) have become increasingly dependent on fishing in Sri Lankan territorial waters (see the inset map in Figure 5 showing the Tamil Nadu coast, important fishing harbours and the northern tip of Sri Lanka). Clearly this has increasingly exposed these craft and their crews to the risk of arrest, both for illegally fishing in Sri Lankan waters and for the use of fishing gear, notably trawl nets, that are illegal in that country. Numerous fishers have had their fishing craft and gear confiscated, have spent extended periods in prison in Sri Lanka and have reportedly suffered abuse and injury at the hands of Sri Lankan officials.

Figure 7
Key fishing harbours in Tamil Nadu in relation to Sri Lanka

As with the movement of mechanised fishing boats from Chennai northwards into Andhra Pradesh, the need of the Nagapattinam mechanised fleet to seek distant waters in which to fish reflects how the local fleet has clearly exceeded the capacity of local resources. For Nagapattinam fishers, Sri Lankan waters seem to represent the only accessible option at present. Attempts are underway to achieve a workable solution to this on-going issue but for the moment it continues to condition fishers from the sector in Nagapattinam.

Fishers along the coasts of Cuddalore and Nagapattinam Districts are mostly members of the Pattinavar traditional fishing caste.

Key changes

The key changes noted in Cuddalore and Nagapattinam reflect general concerns in the sector – **declining catch** (85%), **changes in technology** (82%), **increases in costs and investment** (68%) and **increased competition** (57%).

Increased coastal pollution is regarded as an important issue in Cuddalore and Nagapattinam Districts (50% of FGDs) where development of chemical and power generation industries is viewed with growing concern in the fishing community.

Adaptive strategies

Increased dependence on loans and advances (64%) and **upgrades in technology** (57%) are key strategies accompanied by **intensificationof activities** and **upgrading of skills** (39%).

The importance of **working through associations** and **increased cooperation with peers** is mentioned by 21% of FGDs, reflecting important developments in this area in organisation in the sector, particularly since the *tsunami*disaster and subsequent response.

Supporting and inhibiting factors

While key supporting factors reflect closely the issues identified above – **access to technology** (71%), **positive market demand** and **availability of informal credit** (43%), and **access to communications technology** (29%) – the identification of **supportive associations** and **cooperation within the community** by 25% of the FGDs reinforces the importance attached to these elements in helping stakeholders to respond to change.

Rising investment and operating costs are overwhelmingly the most important inhibiting factors identified, by 68% of FGDs. **High interest on loans** (29%), **limited coverage of subsidies and schemes** and **lack of government support** (21%) are regarded as other contributing factors making it difficult to deal with change.

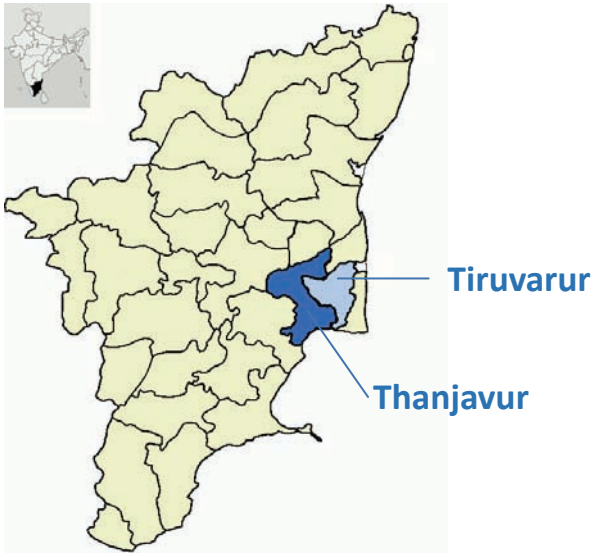
Discussion

Particularly in the wake of post-*tsunami* relief and reconstruction efforts in this area, the levels of organisation and representation have clearly been strengthened and many stakeholders recognise their importance.

There are, however, major concerns in both districts regarding current patterns of coastal development, with major plans for power stations and existing industrial developments along the coast perceived as posing a major threat to fishing.

Significantly, it was also highlighted in both districts how the rapid changes in coastal areas, with conversion of agricultural land to industry and the development of technology and industrial parks has rarely generated opportunities for people from the fishing community. In Cuddalore, during all the discussions held by FIMSUL's partner with different fisheries stakeholder groups, not a single case was encountered of fishers taking up new jobs in local industrial developments or even setting up a new business that might have taken advantage of these new opportunities in some way.

6.5 Tiruvarur and Thanjavur Districts



12 FGDs were conducted in Tiruvarur and Thanjavur Districts, involving 112 participants.

Key features and trends in Thanjavurand Tiruvarur Districts

Tiruvarur District has an area of 2097 km2 and a coastline of just 47 km dominated by backwater areas and saltpans. The District borders with Nagapattinam and Karaikal Districts on the eastern and northern sides, and with Thanjavur on the western side while the short coastline is on the southern side of the district along the shoreline of Palk Bay. Much of this coastline is characterised by lagoon and backwater areas and extensive saltpans. The fishing fleet operating out of Tiruvarur District is limited to about 200 motorised and non-motorised craft. These operate from 14 fishing villages along the coast and are operated by over 3,000 active fishers. Inland fishing, including fishing in backwater areas by tribal groups from outside of the fishing community, is also important in Tiruvarur.

Thanjavur District covers 3,396 km2 bordering with Tiruvarur and Nagapattinam Districts on the eastern side, with Ariyalur and Tiruchirapalli Districts to the north and with Pudukottai District to the west and south. The coastline of just 45 km overlooks Palk Bay and includes three centres from which over 300 mechanised fishing craft operate – Mallipattinam, Kallivayalthottam and Sethubavachathram. Over 1,000 motorised and 300 non-motorised craft operate from the 27 fishing villages located along the district coastline and these are operated by around 3,000 active fishers. In addition, about 1,000 women are involved in the fresh and dry fish trade. The total population of the fishing communities in Thanjavur is over 25,000 people. Thanjavur is regarded as a key rice producing district of Tamil Nadu and is famous for its sophisticated irrigation systems dating back to the medieval Chola period.

In both Tiruvarur and Thanjavur Districts, the make-up of the fishing community is considerably more variable compared to the Coromandel Coast to the north. Besides traditional fishers from the Paravar caste, People involved in marine fishing include a variety of Hindu caste groups, Christians and Muslims. In the brackish water and lagoon areas near the coast, various tribal and low caste groups are also involved in marginal fishing activities in shallow areas.

Population growth in these two districts has been particularly low compared to most of the rest of Tamil Nadu over the last decade. Tiruvarur District has a population of 1,268,094 according to the 2001 census and has grown by just 8.4% over the last ten years. Just over 20% of the population is urban-based. Thanjavur District has experienced similar rates of population growth of just over 8% although a higher proportion of the population lives in urban areas – around 35%. The total population of Thanjavur District is just over 2.4 million people.

The hinterland in both these districts are important areas for rice production and changes in methods of rice production, particularly in the form of intensification of cultivation and greater use of inorganic fertilizers and pesticides were highlighted as having had important impacts in coastal areas. Run-off from agriculture is perceived to have affected the quality of coastal waters and the wetland areas abutting the coastline. Concerns are also widely voiced regarding groundwater quality.

Coastal aquaculture development, and in particular shrimp farming, since 1990 is also seen as having had severe impacts on the coastal environment and is indicated by many fisheries stakeholders as an important negative influence on their fisheries livelihoods as it has both impacted water quality on land and at sea, and is also blamed for negatively impacting the prices of shrimp caught at sea.

Other important changes that have affected the coastline in these districts are the building of the East Coast Road (ECR) which, as in other areas, has had both positive and negative consequences - access to services and markets has improved, but competition in the market place and for land has also increased.

Thanjavur District has several important industrial developments including refineries, a bromide extraction plant and chemical industries located along the coast and these are reported, by local fishers, as having led to increased pollution of coastal waters.

Migration from these districts, including migration to the Gulf States and South-East Asia, seems to be particularly important and is apparently regarded as an alternative livelihood strategy by many people including fishing communities.

Mechanised fishers in this area are also affected by the security issues surrounding fishing in Sri Lanka water, in common with other areas of southern Tamil Nadu.

Key changes

Changes in technology was a key change identified by 75% of FGDs, followed by changes in seasonality and weather (50%).

A feature identified as particularly important in this area was shortage of labour for fishing (25%), reflecting the increasing numbers of out-migrants from this area. Changes in traditional occupations (25%) were also an area of concern.

Adaptive strategies

Adaptive strategies seem to be focussed on **technology upgrades** (75%), **use of new infrastructure** (42%) and **increased use of loans and advances** (33%). The importance of **working through associations** is mentioned by 25% in Thanjavur and Tiruvarur Districts.

Supporting and inhibiting factors

Significantly, in spite of the apparent focus on technology oriented responses to change noted above, among key supporting factors in Tiruvarur and Thanjavur, more emphasis seems to be given to social organisation and institutional support. **Unity and cooperation within the community** (42%), **supportive NGO action** (25%), **supportive government action** (25%) and **supportive unions and *sangam*** (17%), all play a role.

Lack of labour emerges again as an important constraining factor in responses (25%).

Discussion

The highlighting by a significant number of FGDs of labour shortages as an important constraint in these districts is worthy of note. This seems to demonstrate that while many fishers rely on technological development to maintain their competitive edge in the fisheries sector, a considerable number of people are also electing to move out of fishing in the area and look for work elsewhere or in alternative sectors. This process seems to be somewhat more marked in these two districts compared to other coastal districts, perhaps reflecting the more diverse composition of the fishing community here (many of those involved in fishing are not from "traditional" fishing communities), and the limited capacity of local fisheries to absorb more manpower and effort (given a limited coastline and the more enclosed fishing area available in Palk Bay). Migratory livelihood strategies range from emigration to the Gulf States (often to get involved in fishing there) or to South-East Asia, or to urban areas to seek other forms of work.

As part of this strategy, education for younger people is seen as key to provide the best opportunities in livelihood diversification.

The degradation of the coastal environment is clearly an area of considerable concern. Coastal aquaculture is widely blamed for negatively affecting water quality, both in terms of ground water, coastal lagoons and inshore waters. The potential for negative impacts from coastal aquaculture, and intensive shrimp culture in particular, have been widely documented and the visibility of these developments close to coastal fishing communities may play a role in people's perceptions of their impacts. However, the importance of industrial developments and the intensification of agriculture in these ecological impacts should not be underestimated.

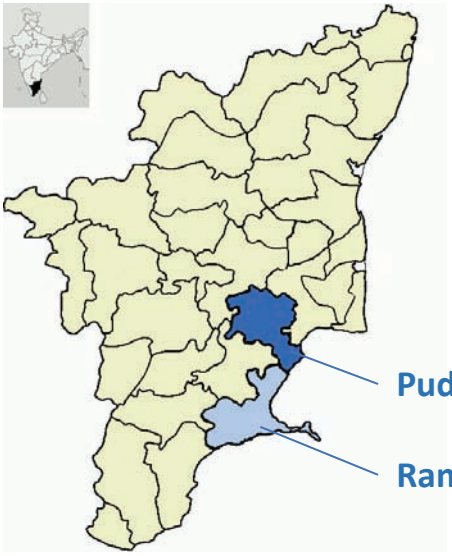
Box 19 : Valuing education in Thanjavur District

SM is a FRP boat owner from Vallavanpattinam in Thanjavur District. Unusually for fishers of his generation, he himself has been educated up to SSLC standard. In spite of his education, he decided to stay in fishing largely because he enjoys it so much. He says his education has helped him in having better relations with supportive institutions and accessing loads from organisations like TAFCOFed. However, perhaps as a result of his education, he has put a lot of emphasis on getting his children educated. He has managed to ensure that his younger son has continued his education but was very disappointed that his eldest son decided to give up school and start working in fishing.

Source : Household interviews by SIFFS team – 25.01.2011.

The emphasis on the need for better organisation and representation in the fishing community that emerged from FGDs in Tiruvarur and Thanjavur is also significant. It may reflect the increasing familiarity with various NGO programmes involving the organisation of *sangam* and Self-Help Groups (SHGs) and the recognition among fishers that they require organisation in order to ensure that their voices are heard at the level of local administration, given the relatively small number of fishers in the districts and the greater importance given to agricultural and industrial development there.

6.6 Pudukottai and Ramanathapuram Districts



28 FGDs were conducted in Pudukottai and Ramanathapuram Districts with 429 participants overall.

Key features and trends in Pudukottai and Ramanathapuram Districts

Pudukottai District has an area of 4,663 km^2 and a coastline of just 39 km which borders the district on the south-eastern side. The District also borders with Thanjavur District on the north-east, Tiruchirappalli District to the north and west, Sivaganga District to the west and Ramanathapuram District to the south. Pudukottai District is predominantly rural, with just 19.39% of the population living in urban areas. However, decadal growth in urban areas since 2001 has been strong at over 26%.

There are 32 fishing communities along the coast of the Pudukottai District with a population of over 25,000 people and about 7,600 active fishers. About 340 motorised and 1,600 non-motorised craft operate from these villages along with 466 registered mechanised craft. Fishing in Pudukottai involves a range of people from different communities, including members of the Paravar and Nadar castes among Hindus, as well as Muslim and Christian community members.

By contrast, of the 1,337,560 people living in Ramanathapuram District in 2011, 31.89% live in urban areas. The population shift to urban areas in this District is particularly strong with a 40% growth in urban population over the last decade.

Ramanathapuram District has a total area of 4,175 km^2 and is bordered to the north by Pudukottai District, to the north and west by Sivaganga District, to the west by Virudunagar District and to the south by Thoothukudi District. The district has a long coastline of 271 km along the shores of both Palk Bay and the Gulf of Mannar and includes the peninsula dividing these two areas which culminates in Rameswaram Island and the chain of islands stretching between Rameswaram and the Sri Lankan coast to the west.

There are 78 marine fishing villages and 17 landing centres in Ramanathapuram District which also has the largest concentration of mechanised fishing boats in Tamil Nadu with an estimated 2,800

Figure 8 : Fish landings in Rameshwaram, Ramnathapuram District

craft of which over 1,400 are based in Rameswaram, roughly 600 in Mandapam and over 700 in Ramnad. Most of these craft are involved in trawling although some have converted to gillnetting. In addition there are over 7,800 other fishing craft, mostly motorised and non-motorised *vallam* made of FRP or wood.

The total numbers of people dependent on fisheries in Ramanathapuram District are around 125,000 with over 35,000 active fishers and over 5,000 women involved in fisheries-associated work such as fish marketing and processing. This fisheries-dependent population is dominated by a variety of traditional Hindu fishing caste groups – mostly Paravar and Nadar community members. However there are also significant numbers of Christian and Muslim groups also involved in fishing.

Pudukottai is a predominantly rural district dependent on agriculture. The completion of the East Coast Road along the coast of the district has been important in creating better communications for the communities there. These coastal districts are also characterised by significant development of coastal aquaculture and the effects of these developments on groundwater and coastal water quality are noted by many fishers.

Ramanathapuram District is more diversified. Tourism associated with the Ramanathaswamy Temple in Rameswaram is particularly important and draws many visitors to the district. The presence of the Gulf of Mannar Biosphere Reserve, which seeks to protect the unique group of 21 coral islands located along the coast of the Gulf of Mannar, is also of considerable significance both scientifically and as a location of tourist interest. As in Pudukottai, Ramanathapuram has seen the development of coastal aquaculture over past decades, particularly in the northern part of the coast and some chemical industries have also developed in the district.

The creation of the Gulf of Mannar Biosphere Reserve has represented an important change affecting communities in the Gulf of Mannar region of Rameswaram District. Many of these coastal communities had long traditions of fishing around the islands inside the reserve as well as collecting seaweed and other marine products from the area. The protection of these areas has closed off many of these livelihood options and created considerable tension between coastal communities and the authorities responsible for enforcing new regulations in the area. While efforts have been made to compensate communities with schemes to develop alternative livelihood activities, these are often perceived as having been inadequate.

Not surprisingly, the security issues relating to the intrusion of Indian fishing craft into Sri Lankan waters are particularly marked in Ramanathapuram. The large trawler fleet based in Rameswaram has been most severely affected by cases of crews and craft being impounded by Sri Lankan authorities.

A particularly important potential threat to the marine environment that could affect both of these districts is the planned Sethusamudram Shipping Canal Project that would eventually aim to create a deep-water channel navigable for large ships through the chain of islands near Rameswaram connecting the Gulf of Mannar and Palk Bay to the north, so as to shorten the sea route for ocean-going vessels to Chennai and other ports on the coast of Tamil Nadu. These craft currently have to sail around the island of Sri Lanka as the waters separating the Gulf of Mannar from Palk Bay are only 11 metres deep. Fishers, and many environmentalists, have expressed concern regarding the possible impacts of the dredging work involved in this project on the marine environment and particularly on the sensitive coral reef systems in the area as well as the increase in traffic at sea that the canal would likely entail.

Key changes

Apart from changes reflecting the overall concerns of the sector for **declining catch** (75%), **changes in technology** (64%), **changes in operation patterns** (61%), and **increased costs and investment** (57%), important concerns in this area included **coastal pollution,** identified by 29% of FGDs. In this area this seems to be linked above all with the development of coastal aquaculture and concerns regarding ground water use and contamination.

The **security issues** regarding both fishing in Sri Lankan waters and access to areas covered by the Gulf of Mannar Biosphere Reserve are also important here (21% of FGDs).

Adaptive strategies

SHGs, as a specific form of organisation, seem to have particular importance here, where they are referred to by 54% of FGDs. However, it would appear that in most cases the principal importance of SHGs lies in their role as an alternative source of credit at relatively advantageous rates of interest. Given the increasing importance of debt as a means of continuing with livelihood activities almost everywhere, the importance of having as wide a range of different potential sources of credit is clear. **Livelihood diversification** is also relatively widely identified in Pudukottai and Ramanathapuram Districts (32%) compared to other areas.

Supporting and inhibiting factors

Among supporting factors, the importance of **SHGs** is reinforced and identified by 50% of FGDs. Supportive action by government and NGOs is also given some salience (21%).

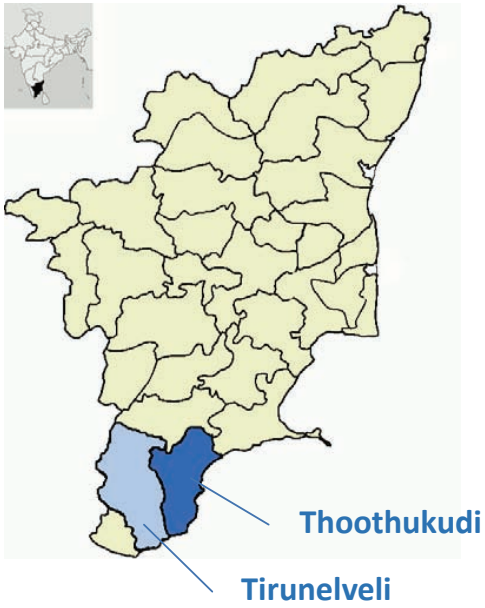
Regulations limiting access to fishing areas was identified exclusively in this area (21%).

Discussion

Pudukottai and Ramanathapuram represent a distinctive area on the Tamil Nadu coast both from the ecological point of view (as they face Palk Bay and the Gulf of Mannar respectively) and from the institutional and social point of view. The communities involved in using marine resources are more diverse compared to other areas and at least some of these areas have been the focus of considerable government and NGO effort in connection with the establishment of the Gulf of Mannar Biosphere Reserve.

While the negative impacts of this are clear from people's references to limitations on access to key livelihood resources, the effects of organisational efforts, particularly in the form of SHG organisation, are also clear. There appears to be more discussion of livelihood diversification in Tiruvarur and Thanjavur than in other areas, reflecting in part the greater involvement in fisheries of people from outside the traditional fishing community, but also exposure to ideas regarding livelihood diversification and movement to work outside of fishing. The role of private companies in stimulating seaweed cultivation was mentioned as important among a few groups (3 FGDs).

6.7 Thoothukudi[2] and Tirunelveli Districts



18 FGDs were conducted in Thoothukudi and Tirunelveli, with 238 participants.

Key features and trends in Thoothukudi and Tirunelveli Districts

Thoothukudi District borders to the north with Ramanathapuram and Virudunagar Districts and to the east with Tirunelveli District. The western side of the district consists of a long coastline of 163 km facing the Gulf of Mannar. The total area of the district is 4,621 km^2. The district has a high level of urbanisation with over 50% of the total population of 1,738,376 living in urban areas in 2011. The rate of urbanisation in the district is high, with a more than 30% growth in urban population over the last decade, compared with a 6% decline in rural population over the same period.

There are 23 marine fishing communities located along the coastline, with 438 mechanised craft operating mostly from

[2] Thoothukudi and Tuticorin are often used interchangeably

Tuticorin harbour and over 3,500 motorised and non-motorised vallam operating from landing sites and beaches along the shoreline, as well as over 1,000 wooden kattumaram. This fleet is operated by an estimated 20,000 active fishers while the total population of the fishing community is around 42,000. Thoothukudi District marks the point along the coastline of Tamil Nadu where Christian fishers become a majority, making up around four-fifths of the fishing population. The role of traditional caste panchayat in resolving conflicts among fishers seen on the Coromandel Coast is replaced here by bodies associated with the Catholic parish and the local priest generally has considerable influence in these fishing communities.

Tirunelveli District is a large district with a total area of 6,823 km^2 and is bounded by Virudunagar District to the north, Thoothukudi District to the east and Kanyakumari District to the south. The relatively short coastline of the District hosts just 9 coastal fishing communities with a fishing population of around 19,600, with 4,700 fishers operating over 1,000 motorised boats – mostly FRP craft – and about 250 *kattumaram*.

As in Thoothukudi District, almost 50% of the population lives in urban areas and the district's 2011 population of just over 3 million people is the result of 13.66% growth in population over the last decade with the urban population growing by over 16%.

Thoothukudi District has seen very significant industrial development over the last decades and has been ear-marked as a key area for future developments. Tuticorin town is the site of a major port facility and the location for several major power generation facilities, with more facilities planned or under construction. Around these units, a significant number of other industrial developments have grown up including manufacturing units for aluminium fluoride, urea, ammonium chloride and caustic soda. All of these developments have led to the Tuticorin area being consistently identified as a pollution hotspot in Tamil Nadu and pollution is highlighted by many fishers as a key threat to fisheries in the area.

Figure 9 : Pressures on the coastal environment in Thoothukudi & Tirunelveli Districts – power generation, sand plumes from mining, port development.

A new nuclear power station at Koodankulam on the coast of southern Tirunelveli District has been the focus of much protest among fishing communities concerned over possible impacts on the coastal environment and their living spaces and conditions. Thoothukudi and Tirunelveli District are also important as centres for wind-power production with the largest wind farm in the country located across these two districts and neighbouring Kanyakumari. A large proportion of the installation of these units is located along the coast close to marine fishing communities.

Mining activities are also important in both Thoothukudi and Tirunelveli and have highly visible impacts on the coastal environment, especially those exploiting coastal sands rich in valuable minerals such as garnet, ilmenite and rutile.

Thoothukudi District is also the centre for salt production in Tamil Nadu and produces 70% of the salt by the state from coastal salt pans.

All of these developments in these two districts mean that fishing communities are increasingly under pressure from surrounding activities that are perceived to be having important impacts on their fishing activities and the quality of their environment.

Key changes

The predominance of issues concerning **coastal development** (61%) and **pollution** (72%) in Thoothukudi and Tirunelveli was striking compared to other areas and reflect widespread concerns for patterns of industrial development in the area. This reflects a general perception that these changes are affecting both fish resources and quality of life for coastal communities in quite drastic terms.

Declining catch (67%) and **decline in fish varieties** (50%) are also highlighted and generally perceived to be linked to these other two changes. **Increasing regulation** (72%) is also an important issue, both because of restrictions linked to the Gulf of Mannar Biosphere Reserve and a range of restrictions on fishing activities introduced particularly in Thoothukudi.

Significantly, while 28% of FGDs mentioned **declining living standards** as a key change, a similar number also mentioned **improving living standards**, particularly among some fishing labour groups where better organisation has enabled them to negotiate better wages and among some fishing groups where cooperative marketing arrangements have had positive impacts.

Adaptive strategies

Adaptive strategies are largely similar to those identified in other areas, with **changes in livelihoods** identified by 22% of FGDs and **diversification of livelihoods** by 17%. **Organisation** of stakeholders is important but still limited in coverage (17%).

Supporting and inhibiting factors

Access to informal credit (61%) and **access to technology** (39%) are seen as key supporting factors, while **access to alternative livelihood opportunities** (22%) and **supportive associations** (17%) also play a role.

Inhibiting factors widely identified include **rising costs** and **fisheries resource decline** (44%), and the **overcrowding and competition, particularly on land**, associated with coastal development in the area (22%).

Discussion

Thoothukudi and Tirunelveli Districts represent, in many respects, the most extreme examples of how marine fisheries, and the communities that depend on marine fisheries, are increasingly suffering from interactions with other sectors of the economy of Tamil Nadu over which they have little or no influence. The interactions between industrial development, power generation, mining and fisheries are extreme along this stretch of coastline and it is not surprising that they have generated high levels of organised protest and activism in local fishing communities. The photographs in Figure 9 show some examples of highly visible examples of these developments and their impacts.

Both fishing communities, and the organisations working with them have experienced difficulties in effectively voicing their concerns over these developments that are already affecting their lives and livelihoods and this explains the importance attached to proper organisation and representation among the stakeholders involved in the FGDs.

However, on a more sombre note, it is also significant that, while many members of fishing communities emphasise that fishing is a way of life for them and an important part of their culture and identity, the perception that they have of being unable to influence decision-making about how coastal areas are to be used is also encouraging many fishers to consider changes in their livelihoods.

Fishers in Thoothukudi and Tirunelveli also highlighted how they felt that the Department of Fisheries was unable to effectively protect their interests in the face of plans for major developments in strategically important sectors such as power generation and industrial development.

The effects on fishers of restrictions on fishing activity as a result of the establishment of the Gulf of Mannar Biosphere Reserve have also served to exacerbate the sense of powerlessness and frustration that predominates among members of the fishing community in these two districts.

6.8 Kanyakumari District

11 FGDs were conducted in Kanyakumari District with 97 participants.

Key features and trends in Kanyakumari District

Kanyakumari District is the southernmost district of Tamil Nadu and is bounded by Tirunelveli District on the north and east and the state of Kerala to the west. Uniquely among Tamil Nadu's coastal districts, Kanyakumari has two distinct areas of coastline subject to very different seasonal and climatic patterns – one short part of the coastline on the eastern side faces the Gulf of Mannar and Bay of Bengal while on the western side a more significant length of coastline faces the Arabian Sea. The total coastline of the district is 71 km while the total land area is 1,672 km^2.

Figure 10: Fishing in Kanyakumari District

The population of Kanyakumari in 2011 stood at 1,863,174, an increase of 11.17% over the previous ten years. Significantly, especially bearing in mind that Kanyakumari does not have any major cities, the rate of urbanisation has been extremely high over the last decade, with urban population growing by over 40% while the rural population has decreased by 43.89%. Kanyakumari is the second most urbanised district in Tamil Nadu. The fisheries sector is an important element in the economy of Kanyakumari with a total fishing population over 148,000 and around 40,000 active fishers operating over 8,700 craft. There are 47 fishing communities along the coast of the district and one fishing harbour at Chinnamuttom. Fishing communities in Kanyakumari are mostly from the Mukkavar caste, although there are also members of the Bharatha caste involved, and the fishing community is predominantly Christian.

The mechanised fleet numbers around 660 craft which are mostly trawlers but include a significant number of highly specialised mechanised gillnetters and longliners, particularly based around Thoothoor, that operate in deeper waters, particularly off the west coast of India and travel as far as Gujarat to fish. 3,288 craft are motorised and a further 4,800 are non-motorised *kattumaram*.

The economy of Kanyakumari is dominated by agricultural activities. The district is a major producer of rubber and was historically regarded as an important rice producing area. Over the past decades, tourism has become increasingly important and the district also hosts the largest wind farm in India for electrical power generation.

Kanyakumari has many very distinct features as a district compared with other coastal districts of Tamil Nadu. Most coastal communities have a long tradition of adherence to the Catholic Church and local parish councils play a key role in decision making both in the community and in the fisheries sector.

Fishers in Kanyakumari are also regarded as particularly expert and entrepreneurial with a long-standing tradition of long-range migration in search of fishing grounds. The location of the district at the point of India giving access to both the west coast fisheries and east coast fisheries means that Kanyakumari fishers have greater flexibility and capacity to adapt to seasonal changes as the west coast is subject to the seasonal regime imposed by the South-West Monsoon while the east coast is more strongly influenced by the North-East Monsoon.

Key changes

The changes identified in Kanyakumari reflect the more exclusive focus of FGDs in this area on fisheries and the potential offered by fisheries. **Changes in seasonality and weather** are areas of concern (73%) as is **declining catch** (64%) and **increasing costs** (45%). However, it is worth noting that **increased competition** was identified by only 9% of FGDs, perhaps because of the wider range of options available in fishing to many of the groups involved here.

Patterns of coastal development are highlighted as important issues by 4 out of 11 FGDs in Kanyakumari (36%).

Adaptive strategies

This more fisheries-focussed response among Kanyakumari FGDs is emphasised when looking at adaptive strategies. **All** the FGDs here identified **upgrading technology** as a key strategy for responding to change, along with **scaling up or intensifying activities, changes in modes of operation** and **increasing flexibility and mobility** (55%), and other means of adapting fishing and operational strategies identified by 45% of FGDs.

Supporting and inhibiting factors

Similarly, both supporting and inhibiting factors were focussed on those factors that help and inhibit fisheries stakeholders in accessing the means to upgrade and adapt their operations, whether at sea or on land – **access to technology** (100%), **appropriate infrastructure** (27%) and **access to credit, government support** and **communications technology** (18%).

The importance of **location**, with the availability of fishing and fish marketing options both on the eastern and western coasts of the peninsula was also highlighted by 27% of FGDs as a factor facilitating greater adaptability.

Discussion

The outputs of the discussion in Kanyakumari seem to confirm the widespread perception that fisheries stakeholders in this area are something of a special case. Fishers perceive a wider range of fishing-related opportunities available to them and are stimulated to take advantage of these by an entrepreneurial spirit and a tradition of fisheries innovation and adaptation. While not unaware of key issues of resource decline and changes in weather patterns, they seem to be in a better position to make use of their advantageous position and willingness to undertake longer fishing journeys to adapt to these changes.

The fact that less emphasis was given to social and organisational issues in the fishing community is perhaps a reflection of a longer existing tradition of organisation rather than a failure to recognise their importance. From more informal discussions involving FIMSUL partners working in the district, the key roles of the wide range of organisations and associations functioning in fishing communities were often emphasised and cooperative fish marketing operations in Kanyakumari are often regarded as a model for other areas of Tamil Nadu and India.

7. Fisheries Stakeholders' Perceptions of the Future

7.1 Perceptions of positive future change

In the discussions with the stakeholder FGDs, participants were asked to focus on the future and think, first of all, about positive change in the future that they would expect to see in their livelihoods. Many groups reportedly found it difficult to initially respond to this point as they were generally more used to being asked about problems and issues rather than possibilities and potential. However, while participants' capacity to think positively about the future was clearly limited on occasions, some interesting points were raised.

7.1.1 Perceptions of future positive change across all stakeholder groups

It is notable that various forms of **improved management of fisheries** were suggested as a positive future change to be hoped for by a significant number of FGDs (36%) and that this represented the single most frequently identified future change. In terms of more specific measures for management, the range of options that people seem to take into consideration is clearly more limited – 20% hoped for **more effective implementation of existing zoning regulations** on fishing grounds, 11% looked forward to an **effective ban on ring seines**, 7% to a **ban on inshore trawling**. 21% looked forward to **better controls on coastal pollution and development**.

A second key area of positive future change that stakeholders overall identified was that of more "**recognition", by institutions** and **within the community**, of the **value and legitimacy of different stakeholder groups' activities**. This element in people's aspirations seems to have several dimensions. On the one hand, different stakeholders felt that their particular role within their communities was not always fully recognised and appreciated by other community members; on the other hand, the extent to which particular stakeholder groups were recognised and catered for by institutions was also a key element in this. Not surprisingly, the groups that emphasised this particular future positive change were all-female FGDs (32%), whose contributions to livelihoods within the community is rarely reflected in recognition at official levels or in access to decision-making mechanisms. It was also of key importance for some of the more marginal groups involved in fishing and was identified by 57% of "niche" fishers.

After these two key areas of concern, participants in all FGDs expressed their hopes for **more secure access to livelihood assets** (20%), **better access to credit facilities**, whether through SHG membership, NGO programmes or bank channels (19%), and **better access to livelihood alternatives** (13%).

7.1.2 Perceptions of future positive change among different stakeholder groups

Not surprisingly, hopes for positive changes in fisheries management arrangements were expressed most forcefully by stakeholder groups involved directly in **fishing**, with 48% expressing the hope that **more effective fisheries management** would be introduced in the future, 31% hoping that this would take the form of **better and more effectively enforced regulations** such as zoning, 27% looking for **better coastal management and controls on pollution**, and 18% specifically expressing the hope that **ring-seine operations would be banned** in the future.

Among **post-harvest workers**, **more effective resource management** and **better recognition of their activities** both within the community and with institutions were regarded as equally important future changes and were both identified by 29% of the FGDs in this group. **More secure livelihoods** and **access to livelihoods assets** were also seen as important hoped for changes by 26% while 24% looked forward to **improved access to loans** through SHGs, NGOs and banks.

The hopes for positive future change among **service providers** in the sector were essentially very similar to those among post-harvest workers, although hopes for **more effective resource management** (32%), **better coastal management and pollution control.**

7.1.3 Perceptions of future positive change in different areas

The emphasis given to different forms of future positive change varied quite significantly across different areas. **Improved fisheries management** was given the priority quite emphatically in Puducherry and Karaikal (59% of FGDs), in Cuddalore and Nagapattinam (39%), in Kanyakumari (36%) and even more so in Thoothukudi and Tirunelveli (72%). In Pudukottai and Ramanathapuram these issues also took precedence and were identified by 41% of the FGDs involved. A general desire for improved management was often accompanied by the identification of more specific sets of measures that might enable this to take place, such as the **banning of ring seines** (25% in Puducherry and Karaikal) and **controls on inshore trawling** (19% in Tiruvarur and Thanjavur) while **better enforcement of regulations** was widely identified as important as well in several areas.

Recognition of the **need for fisheries management** was often accompanied by the identification of **improved coastal management and pollution control** by 19% in Kancheepuram and Viluppuram, 25% in Puducherry and Karaikal, 25% in Tiruvarur and Thanjavur (with specific emphasis on coastal shrimp farming), and, most emphatically, 72% in Thoothukudi and Tirunelveli.

As indicated above, the issue of **better recognition of activities and status** by both the community and institutions was a common theme among female respondent groups, but it was particularly strongly emphasised as a hoped for future change in Kancheepuram and Viluppuram (57% of all FGDs there), in Tiruvarur and Thanjavur (42%), in Chennai and Tiruvarur (29%) and in Thoothukudi and Tirunelveli (28%). In Tiruvarur and Thanjavur, specific mention was made in this regard of the need to give **greater recognition to the work and contributions of women** in the sector (25%).

Access to alternative forms of livelihood activity was not given that strong an emphasis in most areas, although in Chennai and Tiruvallur it was mentioned by 19%, in Tiruvarur and Thanjavur by 25%, in Pudukottai and Ramanathapuram by 30% and in Kanyakumari by 64%.

Livelihood security, and in particular security of **access to key livelihood resources** such as living and working space, were also mentioned frequently. 38% of FGDs in Chennai and Tiruvallur regarded this as a key future positive change, as did a similar proportion of FGDs in Kancheepuram and Viluppuram, where specific emphasis was placed on **secure rights to living and working space** (19%). 28% also identified this area in Thoothukudi and Tirunelveli.

Better access to more formal credit facilities was perhaps not as widely mentioned as an important future change as might have been expected but it was nevertheless given a high priority in Tiruvarur and Thanjavur (42%), in Thoothukudi and Tirunelveli (28%) and 28% in Kanyakumari.

7.1.4 Discussion

While the importance given to improved fisheries management as a positive future change is significant, it is also noticeable that options as to what such changes might consist of seem to be limited, with a widespread reliance on simple measures that would limited the activities of one group of stakeholders in order to apparently provide greater livelihood security to other groups (as is the case with the suggested bans on ring-seining and trawling). There is clearly relatively limited familiarity with alternative options or options that might take a more comprehensive approach to fisheries management.

7.2 Stakeholders' aspirations

When stakeholders were encouraged to think about their aspirations for the future specifically for themselves, as a particular fisheries stakeholder group, it was noticeable that responses tended to be linked closely with those adaptive strategies that had been identified most widely during the previous discussions. Discussion of real changes in the way participants create livelihoods for themselves seems to have been limited.

However, it was clear that participants in the FGDs were able to distinguish between their personal aspirations, which tended to be more focussed on their individual livelihood activities, aspirations for their children and those for the community as a whole.

7.2.1 Stakeholders' personal aspirations across all stakeholder groups

Better access to credit and loan facilities, either through subsidised loans schemes or better bank schemes, was the single most widely identified aspiration across all stakeholder groups (37%), highlighting the importance that stakeholders had already identified in earlier discussions of finding means to finance the continual technical upgrades required in order to remain competitive in fishing and fish trading, as a means of financing the increased investment and costs identified earlier. Various forms of **improved access to technology and infrastructure** were also at the heart of many participants' aspirations, with **improved shore facilities for landing**s, **marketing and handling fish** perceived as most important (37%).

Increased subsidies on fishing gear and **equipment**, or more generically, **better access to technology** were aspirations for 34% and 27% of all stakeholders respectively while increased government support, either in the form of larger **lean season compensation payments** (14%) or government involvement in **regulating fish marketing** (13%) were also important. **Better access to new markets** for fish was also an aspiration of 16% of respondents.

It is perhaps significant that only 11% of those involved in all the FGDs aspired to a change in their current occupation.

7.2.2 Stakeholders' personal aspirations among different stakeholder groups

Not surprisingly, the emphasis on improved access to technology was even more marked among fishers, with 47% hoping for **subsidised inputs**, 36% for **improved landing facilities**, 32% more generic **improved access to technology**, and 25% **better access to loan facilities** in order to facilitate this access to better technology. **Improved navigation and communications technology** was specifically identified by 19% of fisher participants.

Government regulation of fish marketing (18%) and **control of fish prices** (16%) was also regarded as important by many fishers.

Among post-harvest workers, not surprisingly, **access to better loan facilities** seems to be a much higher priority for supporting their individual enterprises and was identified by no fewer than 67% of respondents. **Improved shore facilities** were likewise regarded as key (50%). **Better access to diverse markets** was identified by 26% of this group.

The aspirations of all-female stakeholder groups mirrored those of post-harvest workers very closely as did those of service providers for the sector.

7.2.3 Stakeholders' personal aspirations in different areas

The differences in terms of stakeholders' aspirations from one area to another were not particularly marked. **Access to formal credit arrangements**, **access to technology and equipment** and **access to improved shore facilities** were consistently the dominant aspirations across all areas. Interestingly, **improved shore facilities** was apparently a particularly important aspiration in Kanyakumari District where it was identified by no less than 90% of the respondents involved in FGDs.

In Tiruvarur and Thanjavur Districts, slightly more emphasis seemed to be given to **improved access to alternative markets** (42% of respondents in those areas) and **improvements in fisheries products and prices for those products** (33%), as well as **developing capacity for fishing further offshore** (33%).

Improved safety at sea was also aspired to by 27% of participants in Kanyakumari, 25% in Tiruvarur and Thanjavur and 16% in Thoothukudi and Tirunelveli.

7.2.4 Discussion

The FGDs' discussions of their aspirations as a stakeholder group inevitably tended to focus more on the specific livelihood activity that defined each stakeholder group and the responses obtained seem to be linked closely with the earlier discussions of key changes and people's strategies for dealing with change. In the face of increasing

competition and the need to constantly upgrade technology in order to maintain a competitive edge in the fishery and access new resources, **access to technology**, **access to loans to finance technology** and **access to facilities to enable better landings and prices** all seem to represent key aspirations.

It is also significant that these aspirations seem to be remarkably consistent across all areas.

The aspiration referred to by a significant number of FGDs regarding the role of government in controlling fish prices and eventually fixing prices in some way is also worthy of comment. This can be taken to reflect a continuing perception among producers that the prices that they obtain for their products do not always reflect their true value and are subject to frequent fluctuations. The desirability of attempting to regulate the market for fish is a complex issue which would require considerable deliberation and analysis, but it is important to note that the perception that prices are in some way manipulated and that producers have little control over the returns from their work is important. It is perhaps significant that those involved in fish marketing seemed to be less concerned about this (although 11% of fresh fish vendors also aspired to more government regulation of marketing) and were more concerned about access to new and alternative markets (33%).

7.3 Stakeholders' aspirations for their children

7.3.1 Stakeholders' aspirations for their children across all stakeholder groups

Participants' aspirations for their children and future generations were very clearly defined. Practically all stakeholder groups identified **education for their children**, and **improved quality of education**, as key aspirations (83% of all FGDs). 47% hoped that educational achievement could be converted into **stable employment in a government job**. 28% aspired to their children **working outside of the fisheries sector** and 23% to some form of **alternative employment** for their children.

25-28% specifically hoped that their children would **not** be involved in fisheries in the future.

7.3.2 Stakeholders' aspirations for the children among different stakeholder groups

Aspirations for **education** for children cut across all stakeholder groups. Perhaps not surprisingly, it reached its highest level among all-female stakeholders groups, 94% of which mentioned education as a key aspiration for their children. Among the same groups, the highest level of desire to see children **no longer dependent on fisheries** for their livelihoods was also found (35%). However, it should also be noted that this was also mentioned by 34% of fishers.

7.3.3 Stakeholders' aspirations for their children in different areas.

Given that aspirations for educational achievement for one's children is by no means a feature of fisheries stakeholders alone, it is perhaps worth noting that there were some groups who specifically expressed hopes that their children **would** continue their parent's work in fisheries. In Kanyakumari in particular, no less than 63% of the FGDs there mentioned the hope that their children would be able to **continue with the work of their parents**. In Kancheepuram and Viluppuram and Kanyakumari it was also significant that more emphasis was placed on the hope that children would have access to **appropriate education** (52% and 36% respectively)and it was also mentioned that this should include education that was relevant to the fisheries sector.

In contrast, in Puducherry and Karaikal, Cuddalore and Nagapattinam, and in Pudukottai and Ramnad, 45%, 36% and 96% of FGD groups respectively expressed the hope that their children would specifically **not be dependent on fisheries** in the future. **Access to alternative employment** was also given more emphasis in Cuddalore and Nagapattinam Districts (36% of FGDs), Tiruvarur and Thanjavur (75%) and Thoothukudi and Tirunelveli (28%).

7.3.4 Discussion

The results of these discussions with FGDs show that assumptions regarding the desire of fishers to see their children moving out of fishing are perhaps dangerous. Many fishers do aspire to see their children moving into other, more secure forms of employment, but there is also clearly a desire to see their linkages with fishing and the fishing community maintained. The overwhelming desire expressed by all groups to have their children educated so that they have more choice and possibilities open to them in the future is combined with a desire to see them continue the traditions and cultural identity of the fishing community in both Tamil Nadu and Puducherry.

Frequently, in more informal discussions, the "perfect" future for their children was expressed by fishers and fish workers in terms of "a steady job but connected with fisheries". Government jobs are attractive, but particularly if they are linked with fishers – jobs in the Departments of Fisheries, the Coast Guard or the Navy were often mentioned.

7.4 Stakeholders' aspirations for their communities

7.4.1 Stakeholders' aspirations for their communities across all stakeholder groups

When attention was shifted to thinking about hopes and aspirations for stakeholders' community as a whole, concern for security during old age surfaced and the establishment **of an "appropriate" old age pension scheme** for fishers was mentioned as a major aspiration by 34% of FGDs across all stakeholder groups. 20% also mentioned, more generically, the need for **more government welfare schemes** along the lines of those made available to farming communities while 19% hoped that **discrimination against the fishing community** would be reduced in the future. One mechanism that 14% of the FGDs mentioned as a means of ensuring more responsive government was the establishment of a **dedicated Fisheries Ministry** to better address the needs of the sector.

The importance of **improved levels of organisation and representation** seems to be well appreciated. 25% of all FGDs identified this as a key hope for the future. Also significantly, there is clearly still a strong sense that the fishing community and people involved in the sector are not fully recognised or taken into account by policy makers and society at large. 24% saw an **improvement in the status and recognition accorded to the fishing community** as a key step forward for the future.

7.4.2 Stakeholders' aspirations for the communities among different stakeholder groups

All stakeholder groups seem to be more or less agreed that **appropriate pension schemes** were a key priority for the future, but the emphasis given to **improved levels of organisation and representation** varied more. For fishers this was an important aspiration for about 18% of those involved, while for post-harvest workers and all-female stakeholder groups, this occupied a more important position – 29% and 32% respectively. Women, mostly involved in the post-harvest sector and therefore perhaps with more regular contact with other social groups and society at large, also seem to be more conscious of the poor status frequently accorded to fishers as 24% of post-harvest workers and 35% of all-female stakeholder groups mention the need for **greater recognition, respect and status for fishers** as a key aspiration.

Post-harvest workers (21%) and women (24%) were also distinguished by their mentioning of **sustainable well-being** as a key aspiration for their communities.

Fishers in particular were more emphatic in their hope that a **dedicated Fisheries Ministry** might be established to better address the needs of the sector (21%).

7.4.3 Stakeholders' aspirations for their communities in different areas.

Looking at the different aspirations expressed in different areas, more variability in the sorts of aspects emphasised becomes evident.

Better organisation & representation was identified quite consistently across all areas but in Tiruvallur and Thanjavur (33%), Pudukottai and Ramanathapuram (48%), Thoothukudi and Tirunelveli (39%), and Kanyakumari (27%) it seemed to be regarded as particularly important. In Tiruvallur and Thanjavur and in Pudukottai and Ramanathapuram this was strongly linked to the need for better leadership in the fishing community and was identified by 25% and 22% of FGDs respectively.

Apart from the more widely expressed hope that more welfare schemes and benefits would be made available to the fishing community, in several areas, notably in Tiruvallur and Chennai (19%), in Cuddalore & Nagapattinam (18%) and in Thoothukudi and Tirunelveli (56%) this was linked to the need for **more responsive institutions**.

In two areas in particular, in Tiruvallur and Chennai and Thoothukudi and Tirunelveli, the idea of "**sustainable well-being**" for fishing communities was given considerable importance and was mentioned by 24% of FGDs in the former area and 67% in the latter. This probably reflects the threats to the physical existence of fishing communities that are perceived quite strongly in these areas as a result of intense coastal area development.

7.4.4 Discussion

The rather generic idea of **sustainable well-being** for the community that emerged from these discussions of community aspirations is worth exploring in more detail. As expressed by stakeholders, this seems to describe the possibility for the fishing community of continuing their lives as a distinct fishing community, with a clear identity and way of life, while at the same time ensuring a dignified level of well-being for themselves, their families and the community as a whole. While this specific point was mentioned by just 15% of all stakeholder groups, it was identified as more important by particular groups in Chennai and Tiruvallur, and in Thoothukudi and Tirunelveli. The emphasis on these points in these areas is perhaps significant as they are areas where industrial and real estate developments on the coast are perceived by many fisheries stakeholders as posing a very significant threat to the "well-being" of fishing communities, and in some cases to their very existence. It should be noted that the terminology "well-being" seems to be used by partners and stakeholders specifically to express a more holistic concept of physical, social, psychological and economic well-being that distinguishes this concept from simple economic concerns.

8. Key Conclusions and Recommendations

Conclusions from the above review of the key findings from the Stakeholder and Livelihoods Analysis Process take into account not only the specific points raised and recorded during the District-level Consultations and the FGDs with specific stakeholder groups, but also the broader discussions held during this process with a wide range of stakeholders as well as the experience and analysis undertaken by the NGO partners involved in the process and contained in the District-level reports prepared by each of these partners.

8.1 Key Conclusions

Awareness of an impending crisis in fisheries

Bearing in mind the widespread identification of declining fisheries resources, increasing competition for fish both at sea and at the landing site, and the desire for fishers' children to find employment outside fisheries in the future, there is clearly a perception among many fisheries stakeholders that the sector faces an imminent crisis. In some areas, notably in Kanyakumari, more enterprising fishers are able to take advantage of their geographical location and their long fishing tradition to achieve the level of mobility and flexibility in their fishing operations to be able to maintain a relatively stable and profitable fisheries livelihood, but for most other fisheries stakeholders, the future is not seen as very promising.

Limited range of strategies for addressing this crisis

Faced with this situation, it is significant that the strategies that participants in the sector see as being open to them to deal with and adapt to changes are relatively limited and tend to be strategies that aim to cope with these changes rather than address their root-causes. For example, falling catches are seen as requiring new fishing technologies and modes of operation which require more investment and higher costs leading to increased indebtedness. Awareness or consideration of alternative courses of action, in the direction of improving management of fisheries resources, is apparently limited to measures to limit the operation of specific fishing gears and methods that are perceived as particularly damaging. Awareness of the potential for more comprehensive approaches to fisheries management is limited.

Capacity to adapt to changes is considerable

In spite of having relatively limited options for adaptation at their disposal, stakeholders in the sector are constantly demonstrating a considerable capacity to adapt with those means at their disposal. Fishers invest in new equipment, often learning how to use it "on-the-job" and through observation of others. Actors both at sea and in the post-harvest sector are learning to make use of new technology to be more competitive and are accepting far higher degrees of mobility in the way they operate – fishers go further off shore, and fish vendors move to more distant markets both to purchase and to sell their fish.

Family, community and other networks provide important safety-nets

In this context of dynamic change and adaptation to change in the fishing community, the role of "social capital", in the form of family, relations, and community, in providing support to fisheries stakeholders as they attempt to deal with change is critical. Families provide safety nets, and moral and psychological support in times of crisis. Communities are increasingly organising themselves to protect the interests of their members. Solidarity within the community is often highlighted as a key factor making it easier for stakeholders to adapt to change.

This is not to idealise fishing communities in any way – divisions within the community are also important and there have been important tensions brought to light during the post-*tsunami* relief phase between younger and older generations of fishers. Social pressures are also often mentioned as negative influences, for example where there is pressure to stop women in the fishing community becoming involved in fish marketing or other forms of employment outside the household.

However, community cohesion is, by and large, more frequently referred to as a positive factor.

Awareness of the range of possible management interventions is limited

Where management is considered an option, stakeholders seem to only be aware of the simplest forms of effort reduction – the banning or restriction of specific gears perceived as destructive by particular stakeholder groups, or the implementation of zoning arrangements.

Management of fisheries is largely seen as a responsibility of Government

If management is to be implemented, responsibility seems to be perceived as lying above all with government. The scale of the problems that stakeholders perceive in the sector seems to be regarded as precluding action by stakeholders themselves, at least in the short term. While some local level initiatives have been undertaken, it was significant that little mention was made of these initiatives in the context of the FIMSUL Stakeholder and Livelihoods Analysis Process.

In considering future options, some stakeholders did express the aspiration that the fishing community themselves would take more responsibility for regulating fishing activities.

Awareness of the need to address not just the issues within the sector but broader issues of coastal management

There is widespread recognition among fishers and fish workers that many of the issues that the sector faces, particularly with regards the health and sustainability of the fisheries resource, are not solely related to practices within the sector but are also linked to the broader health of the coastal and marine environment. However while the importance of addressing key issues like coastal pollution and development in coastal areas is recognised, there seems to be an inability to identify appropriate channels for addressing the larger, more organised sets of interests, with greater financial resources, that are driving these developments.

There is a perception that the fisheries sector is always likely to be in a relatively weak position in confronting these broader sets of interests because it is poorly represented, is not widely recognised as an "important" sector and has relatively little leverage in relation to sectors such as industry, tourism and power generation.

Organisation in the sector is developing but is still weak

While levels of organisation, in the form of associations, *sangams* and other forms of social organisation is developing, it does not seem to have yet developed into a form that can fully articulate the diverse needs of different stakeholder groups in the sector. Above all, these forms of organisation largely seem to aim at representing the exclusive interests of their particular group of stakeholders rather than encouraging a broader concern for the health of the sector as a whole.

Looking towards the future, it is clear that there is a considerable awareness of the importance of organisation among fisheries stakeholders. Better leadership, improved representation, and more cooperation within the fishing community through the formation of associations, *sangams* and Self-Help Groups was mentioned consistently by participants in FGDs as an important future development to be aspired to.

Leadership and institutional representation is perceived to be generally lacking

While traditional leaders within the fishing community are still respected and expected to play a role in resolving local conflicts and issues within their communities, they do not seem to offer particularly effective means of representing the broader interests of the fishing community as a whole. In part this may be because these leaders are working within an informal, traditional institutional framework which has difficulty in adapting to a rapidly changing environment.

At the local government level, many stakeholders also note that fishing communities inevitably represent a relatively small part of constituencies and local administrative areas where other sectors and sets of interests are inevitably more dominant. "Coastal constituencies" are mentioned as a means of redressing this, in the sense that otherwise the interests of the fisheries sector and fishing communities will inevitably take second place to the interests of urban and farming communities in the hinterland of the coast.

Institutionally, people in the sector still look "inwards" – to traditional, community-based institutions, to producer associations, to their Departments of Fisheries. This constitutes a weakness as it seems to isolate the sector from the wider opportunities available, whether they be in the form of government schemes in support of poverty alleviation, or chances to take advantage of the opportunities offered by wider development in Tamil Nadu and Puducherry.

It is significant that many stakeholders suggest that the fisheries sector requires a separate ministry, rather than a department within the Agriculture Ministry. This can be interpreted as one means of seeking to deal with this lack of leadership and the feeling that the interests of the fisheries sector are not currently adequately represented. However, it also exemplifies the tendency to seek more exclusive institutional relationships as a means of "protecting" the interests of the sector, often at the expense of more openness to other areas of society and other options for future development.

While the attention given to fishing communities in the wake of the 2004 *tsunami* disaster seems to have played a role in opening these communities up to a wider range of possibilities and options, attention was apparently focussed, above all, on getting people back fishing rather than on "development" in the wider sense. There have been very positive impacts in terms of living conditions in coastal areas, and levels of organisation among some sub-sectors, but the impression received from the FIMSUL Stakeholder and Livelihoods Analysis Process is still of a sector that is essentially inward-looking.

Stakeholders have difficulty in looking beyond the specific interests of their groups to those of the fisheries sector as a whole

An important obstacle in achieving consensus for more effective action for the sector is the natural tendency of most stakeholder groups to focus on their immediate interests, or those of their particular interest group, and their reluctance to consider the broader interests of the fisheries sector as a whole. This does not mean that there is no awareness of the need for more concerted action on behalf of the sector – the crisis facing fisheries is recognised as affecting everyone involved in the sector. However, when it comes to considering specific actions to address existing problems, the focus tends to be on solutions that will protect the interests of one part of the sector, often at the expense of other parts and actors.

This can be taken, at least in part, as a result of the lack of effective representation of the sector as a whole and the focus on representation of specific interest groups. There is effectively, at present, no institutional figure that is in a position to present the longer-term interests of the sector as a whole. Political leadership is always likely to take a relatively short-term view in order to ensure support among a constituency or interest group within the sector. At the same time, the key institutions tasked with responsibility for the interests of the sector are in a relatively weak position to raise and address the key issues that stakeholders identify in relation to the overall sustainability of fisheries, largely because their *de facto* role is primarily to administer and deliver welfare schemes of one sort or another. Traditional institutions, such as the traditional *panchayat* have the potential for taking a longer view but they seem to be perceived as, above all, mechanisms for resolving conflicts within the fishing community and may lack the legitimacy to address wider issues that relate to the sector as a whole.

Definition of the "fishing community" is important

The sense of belonging to the "traditional fishing community", defined by caste, culture and recognition of certain shared values is important for those who identify themselves as members of this community. It also is increasingly important from a more practical point of view as identification as a member of the "fishing community" also defines relationships with institutions like the Department of Fisheries and access to a range of welfare payments and subsidies that are specifically set aside for the "fishing community". The extent to which current definitions of this community correspond to actual involvement in fisheries is not always clear and discussion of whether welfare payments are being accessed by "non-fishing community members" (who may fish but do not belong to the traditional fishing community) or by non-fishers (who may be members of the "traditional fishing community" but do not necessarily engage in fishing) is often animated.

This is clearly of importance in relation to any future attempt to define rights to fisheries as there will inevitably be contrasting perceptions of whether rights should be attributed to "members of the fishing community", defined by caste and traditional occupation but quite possibly including increasing numbers of people who do not actually fish, or by actual involvement in fishing, which would imply a wider interpretation including those who engage in fisheries-related activities but are not necessarily members of traditional fishing castes.

While this issue is always likely to give rise to conflict, it should be noted that, at present, fishing and fisheries-related activities are still mainly the preserve of members of traditional fishing castes.

8.2 Key Recommendations

Securing rights

Improving the extent to which fisheries stakeholders are able to **exercise clearer rights** over the resources on which they depend for their livelihoods is likely to constitute a key part of any future programme for addressing the sustainability issues facing fisheries in Tamil Nadu and Puducherry. This clearly represents a challenge as currently, superior access to capital and technology play an important role in determining the effective "capture" of rights by those able to command that access. Therefore any future discussion aiming at placing some limits on fishing rights has to also address the issue of distribution of rights across different types of fishing activity and levels of technology.

The issue of the relative **inclusiveness of rights** is also one that requires considerable attention. While fisheries-related activities in both states continue to be dominated by members of the traditional fishing community, there are clearly challenges involved in determining exactly a more limited set of entitlements to fishing rights and enforcing them.

Fishing communities emphasise that they have the capacity, through their traditional institutions, to take on a higher degree of stewardship of the resource, but there are clearly signs that, up until now, conflicts of interests among actors within these traditional institutions have meant that long-standing conflicts between small-scale fishers and larger mechanised boats have not always been effectively resolved. However, there is evidence that the growing sense of urgency over fisheries resource decline has encouraged the development of consensual solutions that could provide a basis, in some areas, for work on future management.

Among the majority of fishers, who are those involved in motorised and non-motorised fishing with small traditional or FRP craft, there is a strong desire to see limitations placed on mechanised fishing (in particular trawling but also purse-seining) with a view to redressing the current perceived imbalance in access to resources. However, it is also clear that a simple restructuring of effort without establishing a clear framework for fishing rights and their enforcement into the future would be likely to simply restructure the underlying problem and fail to address its causes.

Improving governance

A key element in any future framework for improved fisheries management will be improvements in the overall governance of fisheries. This will clearly require considerable time to evolve but, based on the outcomes of the FIMSUL Stakeholder and Livelihoods Analysis Process, it is clear that several elements are likely to be central to this.

- Mechanisms are required to ensure that the fishing community is **better represented** and able to **articulate its concerns and proposals** more clearly and consistently in relation to policy makers and institutions concerned with fisheries. Experience with the FIMSUL Visioning Process as well as the Stakeholder and Livelihoods Analysis Process shows that fisheries stakeholders, in spite of their contrasting sets of interests, are motivated to engage in consultations that will enable them to develop appropriate and inclusive proposals for resolving current issues in fisheries. There is clearly an opportunity to establish mechanisms that will allow such consultations to take place in the future and build a forum or platform that can be recognised by the relevant institutions as a counterpart in developing effective co-management solutions for the future.
- Such mechanisms will need to take into account the significant differences that are present between different areas along the coasts of Tamil Nadu and Puducherry and allow them to be effectively represented in consultations.

Taking into account also the length of the coastline involved, this will likely require a series of **area-based fisheries councils** with some form of overall body that can interact with state-level institutions and policy-makers. Time and care will be required to establish the exact roles and responsibilities, as well as the mandate and legitimacy, of such bodies and it will be important to work first on understanding these roles and responsibilities before defining a precise structure for such bodies – function should come before form. Particular attention will need to be paid to the role of traditional institutions within the fishing community in relation to these bodies.

- Particular attention will need to be paid to enabling these new mechanisms for representation and consultation among fishing communities to **engage with wider issues concerning coastal development** that are having an important impact on fishers livelihoods. In particular, this is likely to involve engagement with industry, Planning Commissions, the Departments of Environment and Tourism and all those institutions involved in coastal and marine planning. The perceived gravity of some of the issues surrounding changes in coastal land use indicates this as a possible entry point for the development of fisher community forums.
- Considerable attention will also need to be paid to the **roles of the respective Departments of Fisheries** of Tamil Nadu and Puducherry in relation to such bodies. Ideally, the Departments could play a facilitating role where they could support the establishment of these forums and facilitate the process of defining exactly what their role should be. This is likely to require some development of the capacity of the Departments as facilitators and improve their understanding and skills in supporting institutional development. In order to play a facilitating role, attention will also need to be paid to ensuring a clear separation between the Departments' service provision, welfare and policy making roles and their capacity as facilitators in these new bodies.
- Improved **management of information and knowledge**, as discussed in the outputs of Work Package 6 of FIMSUL on Knowledge Management, would also play a key role in this process. Both the Departments of Fisheries and those involved in any new institutional structures developing to consult, advise or play a role in implementing fisheries management would need to pay careful attention to ensuring that the demand for information and its provision is catered for and that appropriate instruments are available to ensure that all stakeholders involved have ready access to the information they require in order to participate in consultations with the best possible information available to them.

Supporting change

In order to support processes of change in the fisheries sector, it is also important that some of the more immediate issues facing the fisheries sector and consistently raised by fisheries stakeholders are addressed.

Several pathways of action are available.

- The emphasis placed almost universally by all fisheries stakeholders on the need to ensure **appropriate education** for their children represents an important opportunity. Many improvements have been introduced but there are clearly still issues remaining regarding the quality of education available to children from fishing communities and these should be addressed. This is likely to require close cooperation between the Departments of Fisheries and Departments of Education to ensure that fishing communities are able to access better educational facilities and receive the support required in order to encourage fisher children to finish school and achieve levels of educational attainment on a par with other communities.
- In order to provide fishing communities with the **support** they need **to develop sustainable livelihoods**, whether within the fisheries sector or outside, there is clearly a need to adopt an inter-agency, cross-sectoral approach. Key elements that need to be ensured are: access to **appropriate infrastructure and services**, including clean water and health care where these are lacking; the encouragement of **alternative finance systems** that would allow fishing communities to have greater choices regarding sources of financial assets and give them greater flexibility to invest in enhancing their current activities, or in diversifying or changing their livelihood strategies; access to a **wider range of skills**, particularly those relating to identifying and assessing livelihood options, understanding market opportunities and managing their businesses more effectively, whether in fisheries or

outside the sector; ensuring that fishing communities are more **open to the range of economic opportunities** surrounding them by encouraging **better linkages with local government** and other programmes currently not extended to fishing communities.

- The experience of the FIMSUL project in facilitating **wide-ranging discussions and consultations** among fisheries stakeholders from different areas of Tamil Nadu and Puducherry has illustrated the value in encouraging wider contacts between fishing communities and consultations. This process needs to be continued and supported into the future. It will be particularly important, in this regard, to work on effective mechanisms to ensure that women in fishing communities are included in such consultative processes.
- **Safety measures for fishers**, while improved particularly since the post-*tsunami* rehabilitation phase, are still an important priority on which much work can be done and could provide an important entry point for closer collaboration with fishing communities.
- The incentives for major changes in the structure and role of the Departments of Fisheries are relatively limited at present. However, there is scope for the **introduction of new skills** within the departments that would empower them to play a more active role in the promotion of better fisheries management in the future. These would include:
  - ☆ Facilitation skills;
  - ☆ Conflict resolution skills;
  - ☆ Institutional development and analysis;
  - ☆ Planning and policy development based on evidence of policy impact and clear sectoral objectives;
  - ☆ Fisheries management and co-management support.

ANNEXES to the Report

CONTENTS

Annex 1 : FIMSUL Stakeholder and Livelihoods Analysis Process - Methodology and Coverage

1. The Stakeholder and Livelihoods Analysis Process

A key part of the overall FIMSUL project, as defined in both the original project concept note prepared in 2006 and in the revised project design elaborated by the Inception Mission in early 2010 was the conduct of a series of studies aiming to understand and analyse the range of stakeholders involved in the fisheries sectors in Tamil Nadu and Puducherry. This stakeholder analysis would then provide a basis on which to develop, through further study, a better understanding of the key factors influencing the livelihoods status of these stakeholders and therefore their capacity to respond to any future changes in the fisheries sector that might be generated by the introduction of new fisheries management measures.

The principal objective of these two sets of analysis was not limited, however, to simply achieving a better understanding of the fisheries sector to help decision and policy makers for the sector develop more appropriate policy. The Stakeholder and Livelihoods Analysis was to be strongly linked with the subsequent process of building a common vision for the fisheries sector. In order to be effective, any process of developing a "vision" for the future has to be conducted by participants who are as fully informed as possible about the implications and effects of future choices. Only in the presence of as complete a range of information as possible can people develop visions for their future that fully take account of both their own capacities and strengths and the realities of external conditions that they face now and are likely to face in the future. Bearing this in mind, in FIMSUL it was envisaged, from the start, that this process of identifying stakeholder groups and exploring their livelihoods should be a highly participatory process which would not only generated information for the project, policy-makers and planners in the fisheries sector, but also encourage debate and discussion about future options among the stakeholder themselves. This would, in turn, help to prepare stakeholder representatives to participate as fully as possible in any future discussions about the future of the fisheries sector as a whole.

1.1 Objectives of Work Packages 1 and 3

In the FIMSUL Inception Report, the Stakeholder Analysis and the Livelihoods Analysis were originally envisaged as separate activities to be conducted sequentially. However, once the FIMSUL project was underway, it quickly became apparent that the two activities could effectively be combined so as to generate significant savings both in terms of project resources and time. As a result, the planning of the Stakeholder Analysis and the Livelihoods Analysis was undertaken as a single activity.

The objectives defined for this activity were set as:

1. To identify key stakeholder groups in the fisheries sectors in Tamil Nadu and Puducherry;
2. To analyse and understand the livelihoods of these different stakeholder groups and the key factors influencing their livelihood strategies;
3. To understand the adaptive capacities of different stakeholder groups in the face of change.

The underpinning principles and details on the steps involved in this combined process have been documented in detail in the Guidelines for the Stakeholder and Livelihoods Analysis Process produced by FIMSUL in February, 2011.

The various elements within Work Packages 1: Stakeholder Analysis and Visioning and Work Package 3 : Livelihoods Analysis and Best Practice in Livelihoods Support were linked together to provide an overview of the two work packages (See Figure 2, page 4).

Another important choice facing Work Packages 1 and 3 of the FIMSUL project during the development of their detailed work plans and methodologies regarded the question of how to deal with the fact that two states, Tamil Nadu and Puducherry, were being covered by the FIMSUL Project. In common with the other FIMSUL work packages looking at Fisheries Policy (Work Package 2), Legal and Institutional Aspects of Fisheries (Work Package 4), Fisheries Management (Work Package 5) and Knowledge Management for Fisheries (Work Package 6), it was decided to regard the entire coastline as a continuum as, from the point of view of fisheries management, the resources and the fisheries sectors of the two states are largely similar and difficult to separate out.

However, there are clearly elements relating to people's livelihoods where existing administrative divisions are likely to be of some significance: stakeholders in fisheries in different districts, or in different states, are likely to have access to different types of schemes in support of fisheries and different levels of services depending on the priorities and capacities of their respective administration and local governments. Therefore, for the purposes of the Stakeholder and Livelihoods Analysis, it remained logical to take the existing administrative boundaries, between the territories of the Union Territory (UT) of Puducherry and the State of Tamil Nadu, and between the 13 coastal districts of Tamil Nadu as a convenient means of dividing the work to be carried out. This was extended to include separate coverage for Karaikal, an area surrounded by Nagapattinam District of Tamil Nadu which is part of the UT of Puducherry. In two cases, for Tiruvallur and Chennai Districts in the north of Tamil Nadu, and for Tiruvarur and Thanjavur Districts in the central area of the Tamil Nadu coast, the limited extent of the coastlines involved led to the combination of the coverage of these districts into one set of work and one set of reports.

Figure 1 (Page 3) shows the coastal districts of Tamil Nadu and Puducherry covered by the Stakeholder and Livelihoods Analysis.

2. Partners in the Process

In order to carry out this process of stakeholder and livelihoods analysis for FIMSUL, several options were taken into consideration ranging from the commissioning of an appropriately experienced research institute to take on the organisation and implementation of the entire study, to the direct implementation of the work by the FIMSUL project itself.

The option that was eventually selected was to look to the active NGO sector in Tamil Nadu and Puducherry and seek their engagement in the preparation and conduct of the work. The rationale behind this was two-fold. First was the awareness that there were a range of well-established NGOs working in coastal districts of the two states who have accumulated a significant degree of understanding and experience of working with fishing communities and could therefore be expected to work well with communities as well as contribute to the formulation of an appropriate exercise. The second, and perhaps more significant, was that many of these NGOs are destined to continue working into the future in the coastal communities where the FIMSUL work was to be conducted. Thus their engagement in the conduct of the study would hopefully contribute to their own work and provide a basis for future collaboration with whatever forms of activity might be generated by the FIMSUL work.

In taking the partnership approach and working with NGOs, FIMSUL was not unaware of the risks involved. All NGOs have their particular areas of interest and expertise and their own "agendas" for development and change. Among the partners who were eventually selected to work with FIMSUL there are NGOs who bring a wide range of different perspectives to working with fishing communities and managing fisheries, including those with a more ecological and environmental focus (FERAL, Puducherry), those with significant experience in the implementation of large-scale programmes in coastal management and development (the DHAN Foundation, Pudukottai and Ramanathapuram), an organisation that has been working for decades in the organisation and representation of the interests of fishers and fishing communities (SIFFS, Nagapattinam, Karaikal, Tiruvarur, Thanjavur and Kanyakumari), two organisations with a background in activism and advocacy on behalf of the rights of fishers and coastal people (TMSSS, Thoothukudi and Tirunelveli, and GUIDE, Kancheepuram and Viluppuram) and an organisation involved in a range of local-level development and advocacy activities (PLANT, Chennai and Tiruvallur).

From the point of view of carrying out a research activity, working with such a diverse group of organisations represents a considerable challenge as, clearly, each of these organisations have their own well-established approaches to engagement with communities and different levels of education and experience among their staff. However, overwhelmingly, they offered the advantage of a firm grounding in the communities in the areas where they would be working and the capacity to mobilize a network of contacts and relationships that would be vital for the successful conduct of the work.

Based on existing knowledge of the fisheries sector in the two states, and the availability and experience of the NGO partners selected to work with FIMSUL on this unified process, the work was divided across the following areas and partner organisations:

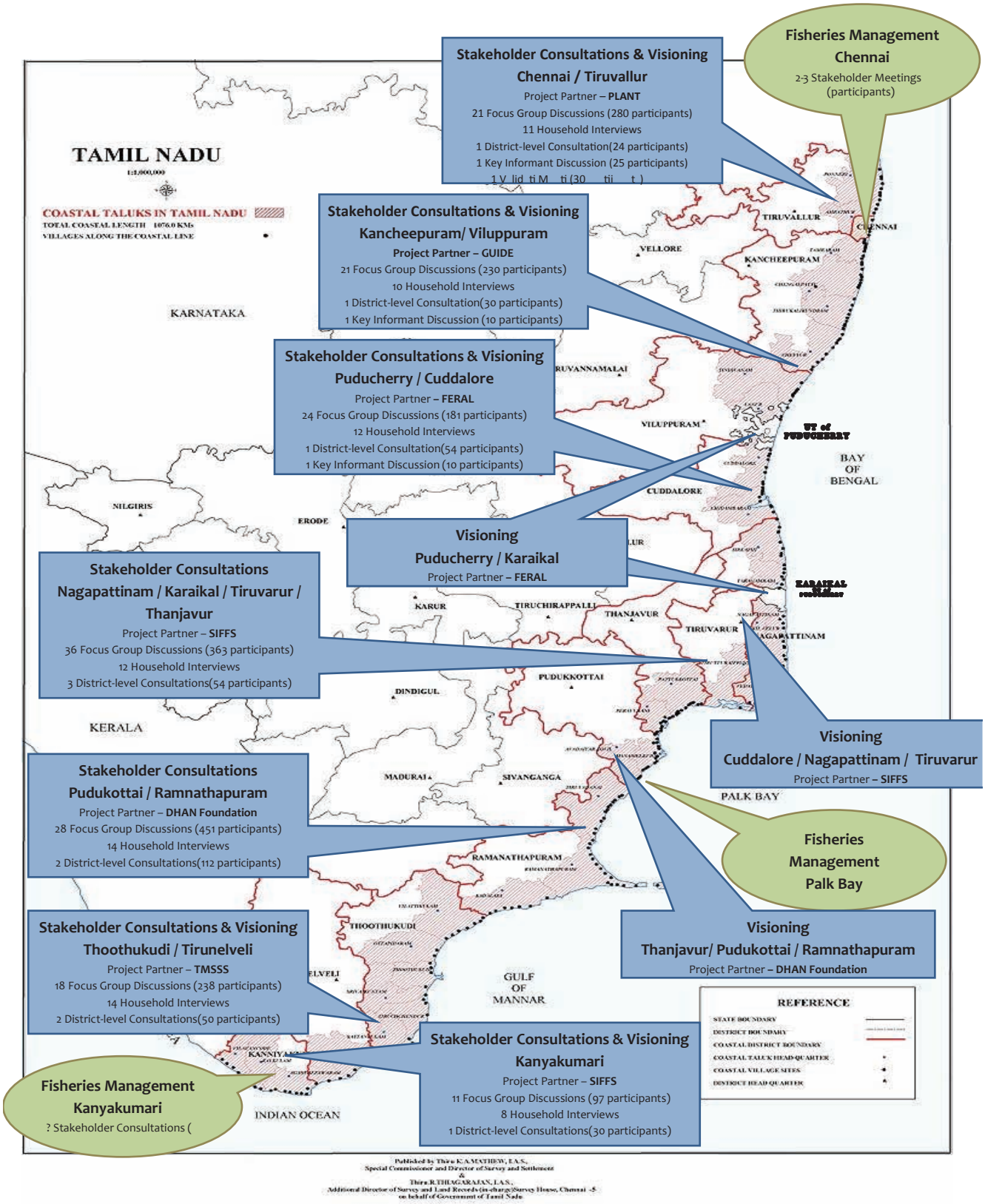
Table 1 : Partners involved in the FIMSUL Stakeholder and Livelihoods Analysis Process

Districts covered	Partner Organisation	Full title and base
Tiruvallur	PLANT	Participatory Learning Action Network and Training, Chennai
Chennai		
Kancheepuram	GUIDE	Gandhian Unit for Integrated Development Education, Chengalpattu
Viluppuram		
Puducherry	FERAL	Foundation for Ecological Research, Advocacy and Learning, Puducherry
Cuddalore		
Nagapattinam	SIFFS	South Indian Federation of Fisherman Societies, Trivandrum
Karaikal		
Tiruvarur		
Thanjavur		
Pudukottai	DHAN Foundation	DHAN Foundation, Madurai
Ramnathapuram		
Thoothukudi	TMSSS	Thoothukudi Multipurpose Social Service Society, Thoothukudi
Tirunelveli		
Kanyakumari	SIFFS	South Indian Federation of Fisherman Societies, Trivandrum

Figure 3 below shows the areas where each of these partners worked and provides some key information regarding the scope of the activities undertaken in each area by the partners, both in the work for the Stakeholder and Livelihoods Analysis Process, for the subsequent Visioning Process under Work Package 1 and the Fisheries Management consultations and studies carried out under FIMSUL's Work Package 5 on Fisheries Management.

This serves to emphasise the critical role that these partners organisations played in the whole FIMSUL process.

Figure 3 : FIMSUL partners and their working areas and activities



3. Methodology

3.1 Methodology development process

In order to take full advantage of the diversity of experience and knowledge among the partners involved in the activity, a process approach was taken to the development of an appropriate methodology for the fisheries stakeholder and livelihoods analysis process. This also served to emphasise the fact that FIMSUL did not regard their partners as mere "data collectors" but as active participants whose involvement was to serve as a bridge between FIMSUL and the fisheries stakeholders whose future FIMSUL is concerned with.

After an initial introduction to the main concepts of stakeholder and livelihoods analysis at a workshop held in Chennai in October, 2010, a broad outline for the process to be undertaken was developed and discussed in more detail with the NGO partners and their field teams at a further workshop held in Puducherry in early December, 2010. The discussions in this workshop led to the development of a detailed set of guidance notes on the process, with flexible formats for the recording of key information and learning. These guidelines have been published separately by FIMSUL and can be consulted for additional details on the methodology adopted for the work.

At regular intervals during the conduct of the work, the teams involved met for further discussion of their experiences to date, identifying areas where there were issues or problems, and discussing the next steps to be taken. The guidance notes developed were constantly reviewed and updated reflecting this experience.

Once the bulk of the fieldwork had been completed, in April, 2011, a "write-shop" was held in Chennai to initiate a process of preliminary analysis of the findings by each partner so as to allow them to conduct a series of "validation" workshops where representatives of different stakeholder groups engaged in the process would be given a chance to see what information the team had generated and, critically, how they had interpreted that information to develop "key learning" about the sector and the livelihoods of the stakeholders involved in the sector.

3.2 Key elements in the methodology

The central elements in the approach used for the Stakeholder and Livelihoods Analysis Process included:

12. A series of multi-level discussions, at the District, District-level Key Informant, Stakeholder Focus Group and Household levels.
13. The generation of "layers" of learning at each of these levels permitting teams to develop an in-depth understanding of the key characteristics of different stakeholder groups involved in fisheries and the nature and dynamics of the livelihoods.
14. A preliminary stakeholder analysis based on secondary literature, and then discussed and revised at preliminary District-level consultations.
15. At these District-level Consultations, involving a range of fisheries stakeholder representatives as well as concerned agencies, both from within the fisheries sector and outside, a historical time-line activity was used to construct a general picture of processes of change in the District so that more specific changes within fisheries could be put in context.
16. These discussions, and subsequent discussions with key informants familiar with the fisheries sector in each district, were used to make an initial identification of fisheries stakeholder groups. This process, conducted in all 13 coastal districts of Tamil Nadu and in Puducherry and Karaikal, generated a total of 31 stakeholder groups at this stage.
17. The subsequent 159 Focus-Group Discussions carried out in the field were organised with all of these distinct stakeholder groups. For the purpose of subsequent analysis, some of these stakeholder groups were consolidated where there was either overlap with other groups or members clearly had very similar characteristics.

Table 2 below reviews the range of stakeholder groups involved in the Focus Group Discussions, the numbers of FGDs organised with each stakeholder group and number of participants, and finally the number of coastal districts where these FGDs were organised.

Table 2 : Stakeholder Groups involved in FGDs

Fish harvesting stakeholders	FGDs	Participants	Districts		FGDs	Participants	Districts
FRP Boat Owners	17	233	13	Shore seine owners	3	50	3
FRP / trawler crew	17	196	11	Shore seine labour	2	25	1
Trawler owners	11	113	10	*Vallam* owners	2	27	2
"Specialised" fishers (cuttlefish, deep-sea, "stay", hook & line, trap & cage)	8	81	5	Marine snail catchers	1	18	1
Kattumaram fishers	7	76	7	Ornamental fish collectors	1	13	1
Backwater fishers (non-fishing community)	6	75	4	Sea cucumber collectors	1	26	1
Ring seine owners/ shareholders/operators	4	37	4	Shell divers	1	5	1
Vathai owners	3	46	2				
Post-harvest fisheries stakeholders (processing and marketing)							
Fresh fish vendors	18	220	13	Auctioneers	2	18	2
Dry fish vendors/processors	9	133	9	Dry fish processing labour	2	27	2
Agents	7	48	7	Fish processing labour	1	15	1
Fish traders	3	46	2				
Seaweed collectors/cultivators							
Seaweed collectors	2	33	1	Seaweed cultivators	1	16	1
Service providers							
Boat builders	6	58	5	Boatyard owners	1	17	1
Ice producers	5	19	5	Head loaders	1	12	1
Mechanics	3	21	3	Net repairers	1	14	1
Transporters	3	35	3	Trawler lifters	1	11	1
Ice vendors	2	18	2				
Other							
Women SHG members	2	25	2				

18. During these Focus Group Discussions the focus was on three key areas:
    - the process of change in the fisheries sector, with participants asked to explore what changes that affected their livelihoods they felt had taken place in fisheries;
    - the ways in which different stakeholder groups have adapted to, or coped with, these changes;
    - the factors supporting or inhibiting them in dealing with change;
    - their hopes and aspirations for the future, including their personal aspirations, their aspirations for their children and their aspirations for their community as a whole.
19. Check-lists of key areas of interest and topics to guide these discussions (rather than closed questionnaires). This approach encouraged those facilitating the FGDs to help stakeholder groups to themselves analyse the conditions they face and changes they have had to address. The records of these discussions could then be compared to identify common, and specific, themes across and between different areas and stakeholders groups to generate a more generalised picture across the two states.
20. A more limited number of household-level interviews conducted with a purposive sample of individual stakeholder households. These were designed to provide an opportunity to explore some of the changes identified in the FGDs in more detail, and understand better how change and adaptation to change played out in reality at the household level. They thus provided important case studies that could be used to illustrate the more general issues identified through the analysis of the FGDs
21. A preliminary analysis conducted by FIMSUL and the partner organisations together followed by a series of District-level Validation Workshops where key findings were presented back to a wider-ranging group of fisheries stakeholders from the District and concerned agencies and institutions in order to verify the findings, check on the interpretation of data given by the teams and to discuss the implications of these findings at a more general level.
22. At these District-level Validation Meetings, efforts were made to engage with a wider range of stakeholders compared with the original District-level consultations in each District with a view to mobilising interest and reflection in view of the subsequent Visioning Process that was to follow.

In the context of the semi-structured, checklist-based focus-group discussions which constituted the core methodology for the activity, many of the specific tools used were aimed, predominantly, at assisting the implementing partners in encouraging participants to engage actively in the discussions and ensuring that their discussions ranged widely across all aspects of their livelihoods and engagement both in fisheries and other activities. It was never intended to generate a set of quantitative data about different aspects of the fisheries sector but to undertake a thorough review of the perceptions of stakeholders themselves regarding how they see the sector, how they perceive their own participation in the sector, the changes they are facing and how they are coping with them, and what they see in the future for themselves, their families and their communities. By marrying these perceptions with the knowledge of experts in fisheries and the institutions concerned with the sector, it is hoped that a more appropriate "vision" for the sector's development and management can be developed as part of the output of the FIMSUL project.

3.3 Coverage of the Stakeholder and Livelihoods Analysis Process

The different levels at which the discussions took place, as illustrated in Figure 2, correspond to different levels of learning within the process. The initial District-level consultations served to develop an overall picture of the different groups involved in the fisheries sector in the district, and the broader processes of change going on, both in fisheries and in other sectors, so as to be able to place changes specifically in fisheries within a broader context. Participants in these meetings include:

- Fisheries Department staff from the District;
- Other members of the District Administration with historical knowledge of the area;

- Leaders or members of any fisheries organisations or producer associations;
- Knowledgeable representatives of different groups of people involved in the fisheries sector.

Altogether, 15 of these initial District-level consultations were held (one in each coastal district of Tamil Nadu, one in Puducherry and one in Karaikal). Following on from these meetings, the implementing partners also organised additional "key informant" discussions with a smaller group of participants from these meetings who proved to be particularly knowledgeable regarding the fisheries sector. This served to discuss in more detail the location of different fisheries stakeholder groups through the district and identify particular points of contact for organising the subsequent Focus Group Discussions.

Based on these District-level meetings, different fisheries stakeholder groups within the district were contacted and timings and locations for the Focus Group Discussions organised. The emphasis in selecting groups that were to be involved in these discussions was to cover the range of different stakeholder groups, rather than attempting to generate a "representative" sample. The differences in perceptions between, for example, boat mechanics and the crews of FRP fishing craft was of more concern for the purposes of the study than the fact that there are far more FRP boat crew than there are boat mechanics. However, where certain stakeholder groups were particularly numerous and widespread in a particular district, efforts were made to hold at least two focus group discussions with different members of that particular stakeholder group in order to ensure a degree of coverage of possible variations within these larger groups.

All together 159 Focus Group Discussions were held, involving more than 1,800 individual stakeholders. These focus groups represented a total of 61 distinct fisheries stakeholder groups, although in the subsequent analysis and discussion, many of these groups were amalgamated where the key characteristics that they displayed and the perceptions they expressed were broadly similar.

To follow up these Focus Group Discussions, the implementing partners were also asked to select a far more limited number of individual households from across a range of stakeholder groups with whom to conduct more detailed Household Interviews. The purpose of these interviews was to explore in more depth, and in a one-on-one context, some of the issues mentioned in the Focus Group Discussions and, in particular, to see how the changes and responses to change mentioned by the groups actually play out at the level of an individual household. Clearly, given the limited time and resources available, the number of Household Interviews conducted could never give rise to a sufficiently large sample as to be regarded as "representative" in any way. However, these household interviews, which include life histories and accounts of the experience of individuals and their families, provide an important additional perspective on the more general learning generated by the study and serve to illustrate the realities of the trends and processes identified.

3.4 Implementation

The key milestones in the implementation of the work for Work Packages 1 and 3 are laid out in Table 3 below.

Some delays to implementation to the Stakeholder and Livelihoods Analysis Process in the field were caused by the calling of State Legislative Assembly Elections in May, 2011 and restrictions on the holding of public meetings during the period leading up to these elections. However, through the excellent cooperation received from the respective Departments of Fisheries in Tamil Nadu and Puducherry and their local officers, as well as the efforts of the partner organisations involved, it was generally possible to continue the work in spite of these impediments.

Table 3 : Stakeholder and Livelihoods Analysis Process - Key Milestones	
Activities	**Timeframe**
Identification & recruitment of FIMSUL WP1 & 3 National Consultants	August-September, 2010
Identification & recruitment of WP1 & 3 partner organisations	September, 2010
1° Workshop on Stakeholder & Livelihoods Analysis Methodology (Chennai)	5th – 8th October, 2010
Pilot testing of draft methodology for Stakeholder & Livelihoods Analysis Process (Kancheepuram District)	13th – 14th October, 2010
2° Workshop on Stakeholder & Livelihoods Analysis Methodology (Puducherry)	23rd – 25th November, 2010
Finalisation of Stakeholder & Livelihoods Analysis Methodology & development of guidelines	November – December, 2010
Implementation of District-level Consultations, Focus Group Discussions & Household Interviews	December, 2010 – March, 2011
Preliminary Analysis & "Write-Shop" with FIMSUL partners (Chennai)	4th – 8th April, 2011
Validation Meetings at District level	May - June, 2011
Finalisation of District Reports & findings by FIMSUL partners	May - June, 2011
Final analysis & development of draft report on Stakeholder & Livelihoods Analysis	July – August, 2011
Inputs to FIMSUL Visioning Process	September – October, 2011
Reporting on Livelihoods Baseline & Change Analysis	November – December, 2011

3.5 Outputs from the process

The information generated from this process was in the form of records of different elements from the livelihoods of different stakeholder groups as they were raised during the course of the discussions held. The open-ended nature of the questions that were being posed to the different groups involved in the process meant that there was no pre-determination of what areas of concern or specific issues people were asked to express themselves about. The maximum extent to which people's responses were "directed" was by using (for example) the construction of a seasonal calendar of their different livelihoods activities to encourage them to identify and talk about these different activities.

Much emphasis was placed on encouraging participants, whether at the district level, in focus group discussions or in household interviews, to talk about changes that they have perceived and that have affected, or are affecting, their livelihoods. Understanding how people have responded to past change and are dealing with current change can provide us with a better understanding of how they are likely to respond to future change and what forms of support they are likely to require adapting to and taking advantage of such change.

Without pretending that the groups met during the course of the Stakeholder and Livelihoods Analysis Process are perfectly "representative", in any statistical sense, of the sector as a whole, an analysis of those key elements that were consistently raised by different stakeholder groups, and which sets of issues characterise some groups rather than others, or some areas rather than other areas, a broad picture of the sector and the concerns of different groups within the sector has been generated.

The records of the different discussions held constitute an important resource with a considerable amount of detail regarding the attitudes, hopes and concerns of specific groups of people involved in fisheries and the current report can only properly represent a fraction of this information and attempt to draw some general

learning about the sector and the people involved in it. Naturally it is hoped that the data generated will provide a resource for people and institutions involved in working with, and planning for, the fisheries sector in the future. These data will be held by the Departments of Fisheries of Tamil Nadu and Puducherry and should be publicly available for further analysis.

The principal data outputs from the process are provided in Annex 2. These diagrams lay out the results of the analysis of the key stages in the Focus Group Discussions held with 159 FGDs.

- **Key changes in livelihoods** : Each FGD started with the construction of a seasonal calendar of the stakeholder group's principal livelihood activities. This served to focus participants' attention on their activities, how they change through the year, the benefits that are generated by different activities and how they combine different activities to make up a livelihood. Once this was complete, participants were asked to think about changes in their livelihoods that have occurred over the last 15 years. This first analysis focuses on the key changes that participants identified.
- **Adaptive strategies for dealing with livelihood change** : In relation to these different key changes, participants were then asked to consider how they have dealt with those changes. This aimed to focus their attention on the different strategies that they have used to either take advantage of change or cope with it. This analysis helps to identify where, in practical terms, many of the strengths of different stakeholder groups lie, and provides indications of how people in the fisheries sector might deal with change in the future.
- **Supporting factors in dealing with livelihood change** : In this section, participants were asked to identify those broader factors that have helped them to implement these adaptive strategies. The aim in this section was to identify the conditions that have provided support to people in dealing with change and therefore some of the "enabling" factors that support adaptive livelihood strategies.
- **Inhibiting factors in dealing with livelihood change** : Subsequently, participants were also asked to identify those factors that have made it difficult for them to deal with change. Clearly there was a risk in this section of generating a simple list of "problems" but the preceding discussion of change and adaptive strategies for dealing with change aimed to help people relate these "inhibiting factors" to the various changes and strategies that they had already identified, as opposed to talking about generic problems.
- **Positive future changes** : Once the discussion of current and past change was complete, participants were asked to focus on what they foresaw for the future. This discussion was initiated with a general question regarding participants' expectations for **positive** change in the future. The aim with this was to help participants to think initially not about future problems (something they are used to being asked about) but to also consider possibilities for positive change. Clearly participants' responses here were conditioned by their familiarity with what options might exist, but the intention was to help FIMSUL identify the extent to which people in the fisheries sector are familiar with possible options for the sector, the fishing community and development in general.
- **Future challenges** : In the FGDs, participants were then asked to identify the challenges that they foresaw in achieving these future changes. To a large extent, the responses given here repeated their identification of "inhibiting factors" in the preceding section and this analysis has not been included here to avoid repetition.
- **Aspirations for themselves :** Participants were then asked to focus on their own aspirations for the future, as a stakeholder group (i.e. FRP boat owners, or ice vendors). This section encouraged them to think more specifically about what they would like to see in the future for their livelihood activities.
- **Aspirations for their children :** The following section focussed on participants' aspirations for their children, with a view to gaining a picture of how they perceived the longer term prospects for the fisheries sector and the potential for the next generation in continuing the activities of the current generation.
- **Aspirations for the community**: This final section then asked participants to consider what changes they would like to see for the community in which they live.

There was inevitably some overlap between the considerations given in each of these sections and some repetition was to be expected. Particularly in the section dealing with **future** changes, some stakeholder groups found it difficult to identify positive changes, something which is not uncommon where people are used to being asked about their problems and needs rather than about future possibilities and potential. However, as far as possible, an attempt has been made to translate the specific factors identified by people into expressions that match the broad categories outlined above. Similar perceptions were grouped together into broader categories to facilitate a degree of quantitative analysis.

However, it needs to be emphasised that this analysis is based on people's **perceptions**, and does **not** provide a statistically valid picture of the actual situation. The intention was to explore how people within the fisheries sector see the sector, its future, and their own livelihoods. Inevitably, people have at times expressed contradictory perceptions but these can be taken to reflect the often contradictory understanding of reality as seen by the participants in these meetings. Future fisheries planners and policy makers will need to address this understanding among stakeholders in their future actions for the sector.

For each of the sections mentioned above, the possibilities for analysis were multiple, but a selection has been made here to facilitate the reporting process. Inevitably this required the exclusion of some potentially interesting forms of analysis in order to focus on those that are of most significance for the sector as a whole across Tamil Nadu and Puducherry. The sets of analysis in Annexes 4 to 7 are as follows:

3.5.1 Analysis of perceptions of change and responses to change by stakeholder group (Annex 4).

This is subdivided as follows :

- Analysis across the **entire 159 FGDs** conducted (**Annex 4.1**);
- Analysis of responses among **fisher FGDs (Annex 4.2)**. These included all those involved in fish harvesting activities (boat owners, operators and labour) but excluding what are described in the stakeholder analysis above as "niche" fishers – those fishers involved, in small numbers, in exploiting very specific coastal resource niches, such as hand fishers for prawns and fish in backwater areas, ornamental fish collectors, etc. Not all the different fishing groups identified have been analysed here but the principal groups included are:
    - ☆ **All fisher groups (Annex 4.2.1) :** This includes those fisher harvesting groups not included in the detailed, group-by-group analysis below.
    - ☆ **FRP boat owners (Annex 4.2.2)** : Numerically, this group probably constitutes the largest single stakeholder group in the fisheries sector in Tamil Nadu and Puducherry and many of the other stakeholder groups in the sector overlap with or are subsets of this wider group.
    - ☆ **Trawler owners (Annex 4.2.3)** : The importance of this group, in terms of the fish catch that they generate and their influence is generally disproportionate to their numbers, but their perceptions are clearly important, especially given the often conflicting relationships between them and other fishers.
    - ☆ **Traditional craft operators (Annex 4.2.4)** : This group includes *kattumaram* fishers, using other traditional and FRP *kattumaram*, and other owner-operators of non-FRP craft described as "country boats", *vallam* and *vathai*.
    - ☆ **Fishing crew (Annex 4.2.5) :** This covers crew working both on FRP craft and on trawlers as there is considerable mobility between these two types of fishing activity.
- Analysis of responses among **post-harvest operator FGDs (Annex 4.3)**. These included all FGDs made up of people involved in handling, selling and processing fish. This distinction is important as women play a particularly important role in sub-sector, and because these operators clearly engage with market relationships

in a different way from fishers. Significantly, this group included mostly people from the traditional fishing community but also some non-fishing community actors, such as some fish traders and fish agents. As with fishing groups, not all post-harvest operators were covered in the analysis but the key groups included are:

- ☆ **All post-harvest operators (Annex 4.3.1)**: This includes those post-harvest operators not analysed in detail below.
- ☆ **Fresh fish vendors (Annex 4.3.2)**: This group is largely made up of women, and constitutes numerically the major set of actors in the post-harvest sector.
- ☆ **Dry fish vendors (Annex 4.3.3)**: While numerically relatively limited in numbers, analysis for this group has been included as they are clearly among the poorest and most vulnerable set of actors in the fisheries sector. As with the preceding group, this is largely made up of women and there is a marked tendency for involvement by poorer and older women in this activity.
- ☆ **Fish agents (Annex 4.3.4)**: While a relatively small group, the identification of this group as being of increasing importance in the fisheries sector and wielding considerable influence indicated that an analysis of their perceptions would also be important.

- Analysis of responses among **service provider FGDs (Annex 4.4).** This covers the discussions held with a range of different stakeholder groups involved in providing services to the sector, such as ice producers and sellers, boat builders and repairers, engine mechanics, net vendors and repairers, and people involved in transporting fish at one stage or another after landing. This group is relatively heterogeneous, including both members and non-members of the fishing community and people with different levels of dependence on the fisheries sector.
- Analysis of responses among **all-female FGDs (Annex 4.5)**. In order to capture the specific dimensions of women's perceptions and how this might differ from that of men, this analysis looks at all the various all-female FGDs. The vast majority of these involved fresh and dry fish vendors, areas that are almost the exclusive preserve of women, but also some groups that participated as members of Self-Help Groups and those involved in sea-weed collection and culture in a few specific areas.

3.5.2 Analysis of perceptions of change and responses to change by area (Annex 5).

7 areas were identified for this analysis. To a large extent they correspond to the areas covered by different NGO partners involved in the FIMSUL process, but some adjustment has been made to group together the two separate areas under the Union Territory of Puducherry (Puducherry and Karaikal, covered respectively by FERAL and SIFFS), and to place Cuddalore and Nagapattinam Districts in Tamil Nadu into a distinct group (also covered by FERAL and SIFFS respectively)The areas and the data relating to them are subdivided as follows**:**

- Tiruvallur and Chennai Districts, Tamil Nadu **(Annex 5.1);**
- Kancheepuram and Viluppuram Districts, Tamil Nadu **(Annex 5.2);**
- Puducherry and Karaikal Districts, Union Territory of Puducherry **(Annex 5.3);**
- Cuddalore and Nagapattinam Districts, Tamil Nadu **(Annex 5.4);**
- Thanjavur and Tiruvarur Districts, Tamil Nadu **(Annex 5.5);**
- Pudukottai and Ramanathapuram Districts, Tamil Nadu **(Annex 5.6);**
- Thoothukudi and Tirunelveli Districts, Tamil Nadu **(Annex 5.7);**
- Kanyakumari District, Tamil Nadu **(Annex 5.8).**

3.5.3 Analysis of perceptions of the future positive change and future aspirations – by stakeholder group (Annex 6).

For the analysis of stakeholders' perceptions of possible future positive change and their expression of their aspirations, for themselves, for their children and for their communities, the arrangement of the presentation of this data is similar to the preceding section. However, some areas of data have been omitted where they were judged to have not added any value to the overall analysis. This is particularly the case with the analysis of stakeholders' aspirations for their children. The data for this has been presented for all stakeholders, for broad stakeholder groups and by area but not by specific stakeholder groups as there was no appreciable difference between the overall data and that of particular stakeholder groups.

In the discussion in the main report covering the data presented in Annexes 6 and 7, the different stakeholder groups and areas are covered more generally once again because there was less differentiation between areas compared with the data presented in Annexes 4 and 5.

The data are arranged as follows:

- Analysis across the **entire 159 FGDs** conducted (**Annex 6.1**);
- Analysis of responses among **fisher FGDs (Annex 6.2)**.
  - ☆ **All fisher groups(Annex 6.2.1)**.
  - ☆ **FRP boat owners(Annex 6.2.2)**.
  - ☆ **Trawler owners (Annex 6.2.3)**.
  - ☆ **Traditional craft operators (Annex 6.2.4)**.
  - ☆ **Fishing crew (Annex 6.2.5)**.
- Analysis of responses among **post-harvest operator FGDs (Annex 6.3)**.
  - ☆ **All post-harvest operators (Annex 6.3.1)**.
  - ☆ **Fresh fish vendors (Annex 6.3.2)**.
  - ☆ **Dry fish vendors (Annex 6.3.3)**.
  - ☆ **Fish agents (Annex 6.3.4)**.
- Analysis of responses among **service provider FGDs (Annex 6.4).**
- Analysis of responses among **all-female FGDs (Annex 6.5)**.

3.5.4 Analysis of perceptions of the future positive change and future aspirations – by area (Annex 7).

Again, the analysis of the data presented in this section follows the same arrangement as in the preceding sections, in other words:

- Tiruvallur and Chennai Districts, Tamil Nadu **(Annex 7.1);**
- Kancheepuram and Viluppuram Districts, Tamil Nadu **(Annex 7.2);**
- Puducherry and Karaikal Districts, Union Territory of Puducherry **(Annex 7.3);**
- Cuddalore and Nagapattinam Districts, Tamil Nadu **(Annex 7.4);**
- Thanjavur and Tiruvarur Districts, Tamil Nadu **(Annex 7.5);**
- Pudukottai and Ramanathapuram Districts, Tamil Nadu **(Annex 7.6);**
- Thoothukudi and Tirunelveli Districts, Tamil Nadu **(Annex 7.7);**
- Kanyakumari District, Tamil Nadu **(Annex 7.8).**

Annex 2 : FIMSUL Stakeholder and Livelihoods Analysis Process - Changes Identified during District Level Consultations

1. Introduction

During the 15 District-level consultations held by FIMSUL, participants from institutions involved in fisheries in each area were asked to provide a broad overview of key changes that had taken place in their District or area. The original intention with this activity was to understand the broader context surrounding fisheries in each area so as to understand more about possible factors influencing change in fisheries that might originate from outside of the sector. In practice, it often proved difficult for FIMSUL's partners to engage with institutions and representatives from outside of fisheries to order to achieve this broader coverage.

Nevertheless, many critical changes originating both within fisheries and outside the sector were identified and these are discussed below. The discussion reviews both the key commonalities, and factors peculiar to particular areas, that emerged from the District-level Consultations and the District-level Key Informant Discussions, and were validated both during subsequent Focus Group Discussions with different stakeholder groups and in the District-level Validation Meetings held at the end of the process.

2. Key Changes Identified

2.1 Changes in the Coastal Environment

The past 20 years of rapid development in both Tamil Nadu and Puducherry have resulted in some dramatic changes in the coastal environment. The increased levels of urbanisation and industrial development in coastal areas were noted in all the areas covered by the FIMSUL partners' teams. A wide variety of industries have been set up along the coast, many of which have specifically located to the coast to make use of sea transport of raw materials and fuel for their activities, lower costs of land in some areas, or the availability of sea water for disposing off effluent or for cooling. Some examples of the developments that were described as having had significant impacts on the livelihoods of surrounding communities, by both fishers and other groups, included:

- Industrial and port development around Ennore in Tiruvallur District and in Chennai,
- The development of a major desalinisation plant on the coast of Kancheepuram District,
- The development of chemical industries along the coasts in Puducherry, Cuddalore and Nagapattinam, and
- The wide range of industrial developments in Thoothukudi and Tirunelveli Districts, including sand mining, thermal power plants, harbour development and chemical industries.

All of these are reported as having had varying degrees of impact on the coastal environment in which fishers live and work. The damaging effects of pollution from industrial effluents were widely cited, air quality was perceived to have declined and participants reported that extensive coastal areas have effectively become un-useable for fisheries activities as a result.

The coastal environment is also subject, in particular areas, to significant pressure from real estate, urban and tourism development. Large sections of the coast line from Ennore in the north to south of Puducherry are being developed for housing and technology parks and tourist resorts are also on the increase, on occasions reportedly creating barriers to beach access for fishers, putting pressure on groundwater resources and driving up land values.

After the *tsunami*, and in spite of the introduction of the Coastal Regulation Zone (CRZ), many of these processes are reported to be on the increase and there is a widespread perception among fishers that the regulations on coastal use are applied in a differential manner between fishers and their communities on the one hand, and industry and real estate developments on the other.

Other forms of coastal development, such as coastal aquaculture, are of importance in particular areas, such as Pudukottai.

As with coastal areas everywhere worldwide, the coasts of Tamil Nadu and Puducherry are inevitably locations where the downstream effects of upstream development are often concentrated. Thus the increase of mechanised, intensive agriculture with more use of pesticides and artificial fertilizers has inevitably contributed to an increase in the effects of run-off along the coast. Similarly industrial development and urbanisation inland are reported to have increased the pollution load flowing downstream to the coast.

Coastal erosion is reported as an important change in the environment in some localities, notably the northern part of Puducherry,

2.2 Changes in infrastructure

Along with the industrial and urban development mentioned above, the past 20 years has also seen a significant increase in provision of vital infrastructure to coastal areas. The development of the ECR (East Coast Road) has provided access to a large proportion of the coastal areas of both states, with the exception of some sections of Cuddalore and Nagapattinam Districts, and has vastly improved transport for communities along the coast. Clearly this has both opened the door for outside development to enter the coastal area, many parts of which were extremely isolated until 10-15 years ago. Particularly in the wake of the *tsunami* it was possible for coastal communities to access electricity, schools, medical services and improved housing for many fishing families in ways that were unthinkable in the past.

More specifically in fisheries, the development of harbour facilities was also mentioned as having changed fishing livelihoods in many areas with more landings concentrated in location where harbours are available and associated services for provision of diesel and ice have changed the mode of operation of many fishers who previously operated from village-based beach landings.

2.3 Changes in employment

Patterns of employment in coastal areas have also changed. The swift pace of development in industry and urban centres has created considerable demand for work in construction, while mechanisation changes in agriculture, have led to declining opportunities for work in this sector. This decline of agricultural opportunities is also perceived as being due to changes in land use.

Improved communications and transport, coupled with more educational facilities, has also led to more graduates, and the numbers of educated people from the fishing community is reported to have increased substantially. The rehabilitation efforts in coastal communities in the wake of the 2004 *tsunami* also played an important role in raising the profile of education among fishing households and encouraging them to seek better work opportunities for their children. The extent to which the expectations of employment of this better-educated generation of fishers is being met by availability of jobs in industry, government service or the private service sector is less clear. Reports of educated fishers ending up back on their father's fishing boat are not uncommon and there is a widespread perception that it is still particularly difficult for members of the fishing community to access better forms of employment.

2.4 Changes in governance and institutions

While the past 20 years in India has seen significant changes in local governance structures and institutions, it is significant that, in the course of District-level discussions held in 15 locations in Tamil Nadu and Puducherry, as well as 159 Focus Group Discussions up and down the coast with a wide range of respondents from different social

and economic backgrounds, the *panchayati raj* system and the reforms which it has undergone over the last decades, and even District Administrations, seem to have been mentioned on only a small number of occasions. This seems to reflect a widespread perception, certainly among those involved in the sector, that fishing communities and fisheries are something of a "special case". Significantly, even when it comes to government schemes and welfare arrangements, those mentioned are overwhelmingly schemes that relate exclusively to fishers (recent government measures to ensure a minimum level of employment for poor people in rural areas were only mentioned on a few occasions and mainly because they have made it more difficult on occasions to find readily available labour for fisheries-related activities!)

This does not, however, mean that fishing communities along the coast have been immune from change in their governance and institutional arrangements. The past twenty years has seen a singular growth in the number, variety and influence of a wide range of producer associations and representative groups. These should be distinguished from Government-sponsored cooperatives, whose principal function to date, has been to provide a mechanism for the implementation of government welfare schemes for fishers and dispense the various welfare payments made available by the respective State Departments of Fisheries.

It is clear that these various associations, *sangams*, and producer groups now represent a key set of actors in the coastal setting, which seems to have received an additional impetus in the wake of the post-*tsunami* reconstruction efforts. Their role in representing the interests of their memberships, resolving conflicts and raising issues with the relevant authorities seems to be steadily increasing.

This needs to be set against the role of the traditional caste *panchayat* and parish councils that have, in the past, played the key role in providing a form of institutional framework for fisheries operations and in resolving conflicts within the sector. These traditional *panchayat*are still active and particularly important in some areas but, as a general rule, their influence seems to have declined, particularly since the *tsunami* disaster and its aftermath which seems to have provided an opportunity for a younger generation of leaders of the fisher community to come to the fore. It is not always clear the extent to which this is taking place **within** the well-established traditional *panchayat* system or **in parallel** to it, but it clearly represents a significant shift in the balance of decision-making and power within fisheries. It is significant that there are relatively few references in the discussions held during the FIMSUL work, to the traditional *panchayat*, even with reference to conflict resolution.

In the southern part of the coastline, in Kanyakumari in particular, the parish councils that have traditionally held considerable influence in fishing communities seem to continue to be influential, perhaps because they have also been involved in the promotion of various forms of cooperative and associations to represent the interests of different fishers groups.

2.5 Changes in the marine environment

In those areas most strongly affected by the 2004 *tsunami*, from Point Calimere up to Chennai, the post-*tsunami* period is singled out as having marked a widespread change in patterns of current, waves and even the topography of the seabed. This is perceived, among fishers, as having to some extent rendered obsolete much of their accumulated traditional knowledge and as having made it increasingly difficult to predict the behaviour of the sea, and thus the fish resources found there.

On top of this, the increasing irregularity of weather patterns is also frequently noted by almost all respondents as being a key factor affecting fishers. This is described as having almost "annulled" the seasonality of fisheries in some cases.

2.6 Changes in fisheries resources

If there is a single change which every single stakeholder contacted by the FIMSUL partner teams agreed upon, it is that fisheries resources appear to be on the decline. In most cases, this is coupled with a belief that **competition** for those resources has also increased, particularly as a result of the increase in quantities and varieties of fishing gear, size and power of fishing craft and the numbers of craft involved. This implies that many respondents believe that at least part of this perceived decline may be the result of the resource simply being divided among more fishers. However,

many fishers are also able to provide extensive lists of fish species which they simply do not see any more and there is a widespread sense that the resource is in a critical state. Changes in the coastal and marine environment such as those noted above are also seen as playing an important role in this decline.

2.7 Changes in technology and access to technology

Similarly, there is almost universal consensus in noting the impact of changes in new technology and the availability of new technology on fishing practices. Significantly, the time frame that is commonly invoked for this change is longer than that generally associated with other key changes. In several of the District-level Consultations, participants traced the changes in technology back to the introduction of trawling in the early 1970s, following by changes in the types of nets used, and the expansion of motorisation.

From the 1990s, the introduction of FRP boats is also pinpointed as having represented a major change affecting fisheries everywhere along the coast. This, coupled with more powerful engines, has increased fishers' operational range, their mobility, their capacity to carry ice and so stay at sea for longer, and, critically, their carrying capacity for fishing gear. The post-*tsunami* rehabilitation of the fishing fleet, which practically made FRP fishing boats available to all fishers along the coast (although many of these craft have reportedly not stood the test of time because of problems in the quality of construction), provided an additional drive towards fishers' increased access to new technology. More recently, this has been coupled with growing access to navigational technology (GPS) and fishing aids such as fish finders on some larger craft.

Mobile phone technology was also highlighted as having changed the mode of operation of many fishers and those involved in the marketing chain. Fishers are able to access up-to-date information about prices and the best places to land their fish, while fish vendors, merchants and agents are likewise able to identify where landings are available and link up with different actors along the marketing chain with far greater ease.

During the District-level Consultations, these changes in technology were primarily highlighted as representing a set of changes that have influenced everyone involved in fishing, generated a greater degree of mobility and dynamism in the fisheries sector, increased fishing capacity and which has clearly had significant impacts on the fisheries resource which is now seen as being subject to far greater pressure from fisheries than before. In subsequent Focus Groups Discussions, many respondents also highlighted the implications of the rise of technology in fisheries in terms of the levels of investment required in order to "keep up with the competition". In the keenly competitive world of fisheries, the need to keep abreast of new technology, whether it be in the form of larger and faster engines, digital navigation aids to locate fishing sites more quickly, or new types, and greater quantities, of nets to ensure that every available resource can be exploited and fishing activity can be maintained year round, has reportedly driven the cost of fishing operations upwards steadily.

Annex 3 : FIMSUL Stakeholder and Livelihoods Analysis Process - Introduction to the Data Tables

1. Introduction

The following tables present the basic information on the outputs from the Focus Group Discussions that represent the basis of the discussion of findings and conclusions in the preceding report.

The format used during these FGDs aimed, first of all, to produce an atmosphere that was conducive to free discussion by the participants about the issues that were important to them. This meant that the sets of issues that participants in these discussions raised were expressed in their terms and there were often differences in the ways in which particular issues were stated.

Dealing with these variations clearly represented a challenge in terms of analysis as there was no prior coding of responses and the categorisation of the points that FGD participants raised was carried out after the activities had been completed. Inevitably some "interpretation" was required in order to determine which sets of responses could reasonably be grouped together for the purposes of analysis, but the copious documentation provided by FIMSUL's partners on the process and each of the FGD meetings, coupled with frequent discussions and interactions with the teams involved, generally made it possible to identify reasonable ways of grouping together different sets of responses into more generic points that could become the basis for analysis.

Clearly, in the process, some of the details relating to the specific nature of particular stakeholder groups in particular locations is lost, but the subsequent incorporation of information from the Household Interviews should help to call attention to how these issues have actually played out on the ground.

For the purpose of understanding the basis for each of the tables presented in the following annexes, it is important to remember how the Focus Group Discussions (FGDs) conducted in the field were structured. This is explained in more detail in Annex 1 on methodology but, in brief, the key sets of issues discussed were as follows:

1. Key changes in livelihoods;
2. Adaptive strategies for dealing with livelihood change;
3. Supporting factors in dealing with livelihood change;
4. Inhibiting factors in dealing with livelihood change;
5. Positive future changes;
6. Stakeholders' personal aspirations;
7. Stakeholders' aspirations for their children;
8. Stakeholders' aspirations for the community.

For the purposes of analysis, elements 1-4 were looked at together and the data generated is presented in Annex 4 and 5 below. Elements 5-8, which focussed more on future hopes and aspirations, are dealt with in Annex 6.

2. Presentation of the Analysis

The analysis presented here is divided into three main sections. These correspond to the three main sections found in the text of the accompanying report and are as follows:

- **Annex 4 : Livelihoods of Fisheries Stakeholders through their Perceptions and Responses to Change**
- **Annex 5 : Area-based Characteristics of the Livelihoods of Fisheries Stakeholders**
- **Annex 6 : Fisheries Stakeholders' Perceptions of the Future.**

Within each of these sections, the more detailed division in the data are laid out below.

2.1 Annex 4 : the Livelihoods of Fisheries Stakeholders through their Perceptions and Responses to Change

This section is divided into 5 main sections:

1. **Annex 4.1** presents an overall analysis of the **livelihoods across all stakeholders groups** involved in the Focus Group Discussions, looking at each of the first four elements covered during the course of the focus group discussions, namely:
2. Key changes in livelihoods;
3. Adaptive strategies for dealing with livelihood change;
4. Supporting factors in dealing with livelihood change;
5. Inhibiting factors in dealing with livelihood change.
6. **Annex 4.2** presents the analysis of "**fisher" stakeholder groups**, or those groups involved in harvesting fish directly. This includes a table with the overall analysis of all these fisher groups and then tables with the analysis of each key fisher group, covering each of the 4 elements listed above.
7. **Annex 4.3**presents the analysis of **post-harvest stakeholder groups**, taken first as a whole and then each of the key groups, again looking at each of the 4 elements above in turn.
8. **Annex 4.4** presents the analysis of **service provider stakeholder groups**, first as a whole then each of the key groups.
9. **Annex 4.5** presents the analysis of **all-female stakeholder groups**, in this case taken only as a whole.

2.2 Annex 5 : Area-Based Analysis of the Livelihoods of Fisheries Stakeholders through their Perceptions and Responses to Change

This section looks essentially at the same material used for Annex 4, but instead of analysing it on a stakeholder group basis, it is analysed on an area basis. The areas covered correspond essentially to those covered by FIMSUL's NGO partners taking account of areas with broadly similar characteristics from the point of view of the fishing communities, the stakeholders and the fisheries. Where appropriate, Districts were clubbed together into single areas to facilitate analysis.

The analysis here is presented as follows:

1. **Annex 5.1** analyses the data across all stakeholder groups for **Tiruvallur and Chennai Districts** focussing on the 4 elements used in the previous sections, namely:
   - Key changes in livelihoods;
   - Adaptive strategies for dealing with livelihood change;
   - Supporting factors in dealing with livelihood change;
   - Inhibiting factors in dealing with livelihood change.

2. **Annex 5.2** analyses the same data for **Kancheepuram and Viluppuram Districts**.
3. **Annex 5.3** looks at **Puducherry and Karaikal Districts** of the Union Territory of Puducherry.
4. **Annex 5.4** covers **Cuddalore and Nagapattinam Districts.**
5. **Annex 5.5** focuses on **Tirvarur and Thanjavur Districts.**
6. **Annex 5.6** contains the analysis for **Pudukottai and Ramnathapuram Districts.**
7. **Annex 5.7** looks at **Thoothukudi and Tirunelveli Districts.**
8. **Annex 5.8** focuses on **Kanyakumari District.**

2.3 Annex 6 : Analysis of Perceptions of the Future among Fisheries Stakeholder Groups.

This section also focuses on the perceptions of all fisheries stakeholders regarding the future. The focus here is on the other 4 key elements covered in the FGD discussions, namely:

1. Positive future changes;
2. Stakeholders' personal aspirations;
3. Stakeholders' aspirations for their children;
4. Stakeholders' aspirations for the community

For the purposes of this analysis, the factors relating to stakeholder groups and to specific areas are both looked at and organised as follows:

1. **Annex 6.1 : Analysis of Future Positive Change – by Stakeholders Group and by Area.**
1. **Annex 6.2 : Analysis of Stakeholders' Personal Aspirations - by Stakeholders Group and by Area.**
2. **Annex 6.3 : Analysis of Stakeholders' Aspirations for their Children - by Stakeholders Group and by Area.**
3. **Annex 6.4 : Analysis of Stakeholders' Aspirations for their Communities - by Stakeholders Group and by Area.**

Inevitably, discussions of these various aspects of stakeholders' livelihoods and their responses to change in their livelihoods tended to often cut across these sections. For example, factors inhibiting people's capacity to adapt to change were often repeated as factors that would represent future challenges in achieving positive change in the future. Participants on occasions had difficulty in clearly distinguishing between future aspirations for themselves as a "stakeholder group" and their "community". However, it was generally possible to sort responses into their respective categories retrospectively.

For the purposes of presentation, a colour coding of related issues has also been introduced to enable easier identification, within the diagrams, of factors that relate to:

- Natural assets and their condition (including decline or increase in resources, degradation of the resource base or the natural environment, and weather and seasonality factors);
- Financial assets (including costs and earnings, income, investment, access to capital in any form including loans or credit);
- Market-related factors (including supply and demand of either products or raw materials, competition in the market place, prices);

- Physical assets (including equipment, technology, infrastructure, communications, transport and access to all of these);
- Institutional assets (including formal institutions, regulations and factors affected primarily by the actions of institutions);
- Social and informal institutional assets (including factors relating to community and informal institutions, informal support networks such as family and friends, social cohesion and levels of organisation and representation within communities, including capacity to voice demands and secure rights and recognition);
- Human assets (including education, training and skill-development, health and any factors relating to access to these);
- Operational strategies (including any changes in the way people conduct their main livelihood activities in an attempt to enhance or sustain them, and factors that influence their capacity to do so – such as changing their areas of operations, or the scale of their operations, or the techniques they use for those operations, competition for space, interactions with other actors, etc.);
- Livelihood strategies (or any factors that relate to the capacity to significantly change people's principal mode of making a livelihood).

This coding was carried out principally to help readers to orient themselves among what were, in many cases, a considerable number of different responses. Obviously, there are important overlaps between these categories. For example, the respective definitions of formal versus informal institutions are inevitably vague and the differentiation made here was based on people's apparent focus on "outside" formal institutions, such as government departments or non-government organisations, or on "inside" organisations essentially from within the community, whether formal or informal. Producer associations obviously sit astride this division but have been included in the "social and informal institutional factors" because they seem to have an important role in increasing people's sense of being represented and having a voice in decision-making.

Similarly, there is clearly much overlap between physical assets (or access to technology, infrastructure and equipment), changing modes of operation (which are often forced or facilitated by access to new technology) and livelihood strategies. The decision regarding how to distribute particular responses into one or the other of these categories was based on an interpretation of where the emphasis of people's responses lay. On occasions, a single factor identified by a particular group may have been recorded under all three of these different areas where it contained elements of them all.

The distinction between "operational strategies" and "livelihood strategies" was introduced to distinguish between the wide range of factors that different stakeholders mentioned that were specifically related to the ways in which they conduct their fisheries-related activities – such as the time they spend fishing, the scale on which they might operate their fish vending activities, etc. – and broader strategies relating to their livelihoods as a whole. This latter area was highlighted in order to distinguish where stakeholders were aware of or considering more fundamental livelihood change and the factors that influence their possibility of making such a change. Thus "migration" would fall into the latter category, while "accessing fisheries further off shore" would fall into the former category.

The types of factors that participants identified at different stages in the FGDs (for example when they were talking about current and past changes, and when they were talking about possible future change) also puts this categorisation under strain at some points, but generally it has been possible to maintain the categories throughout the analysis of the outputs of these discussions.

Annex 4

FIMSUL Stakeholder and Livelihoods Analysis Process

Analysis of Perceptions of Change and Responses to Change by Stakeholder Group

Annex 4.1 Analysis of perceptions of change and responses to change across all fisheries stakeholders

Figure 4.1.1 : Key livelihood changes identified acrossall FGDs

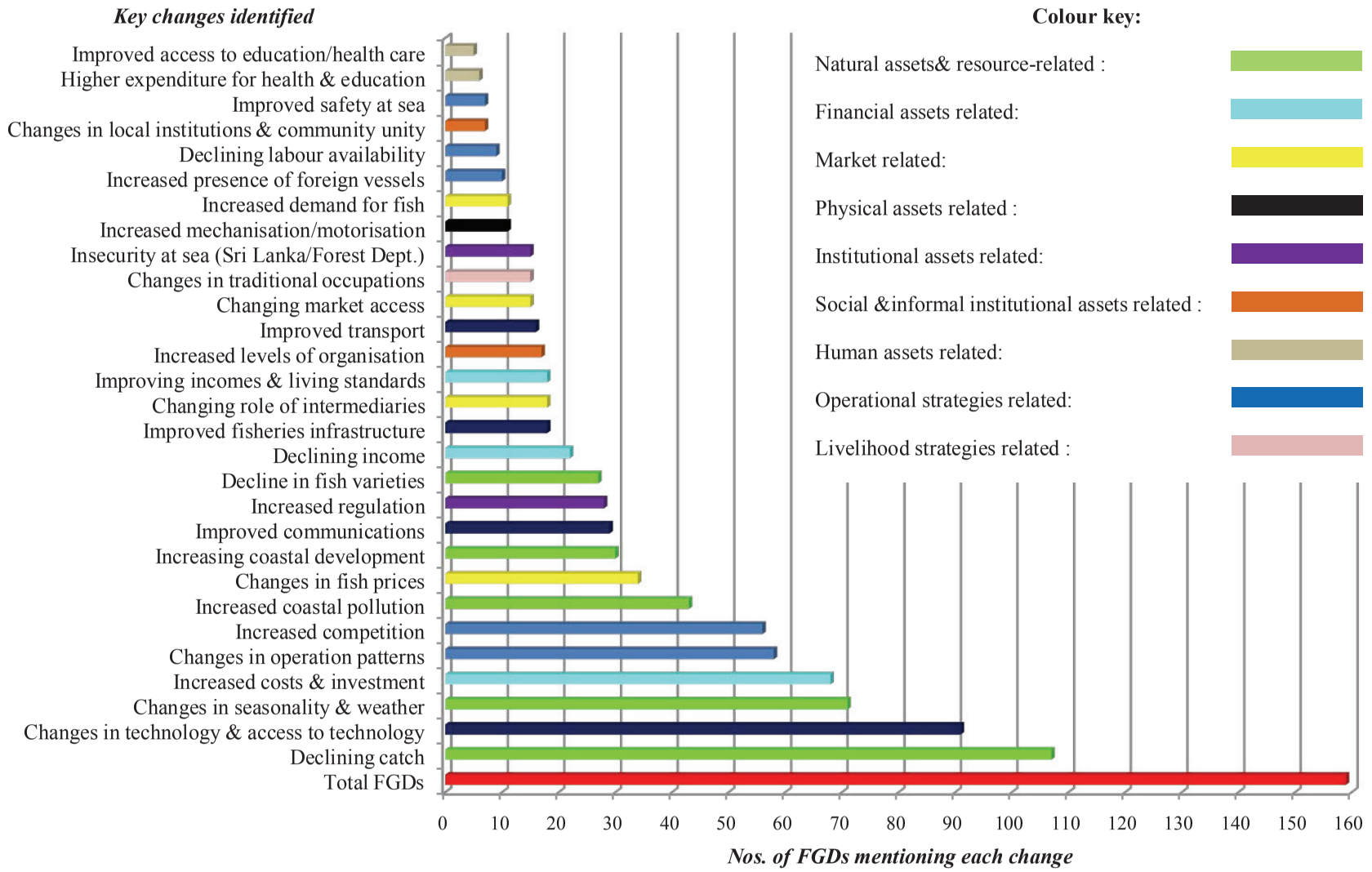


Figure 4.1.2 : Adaptive strategiesidentified during FGDsacross allfisheries

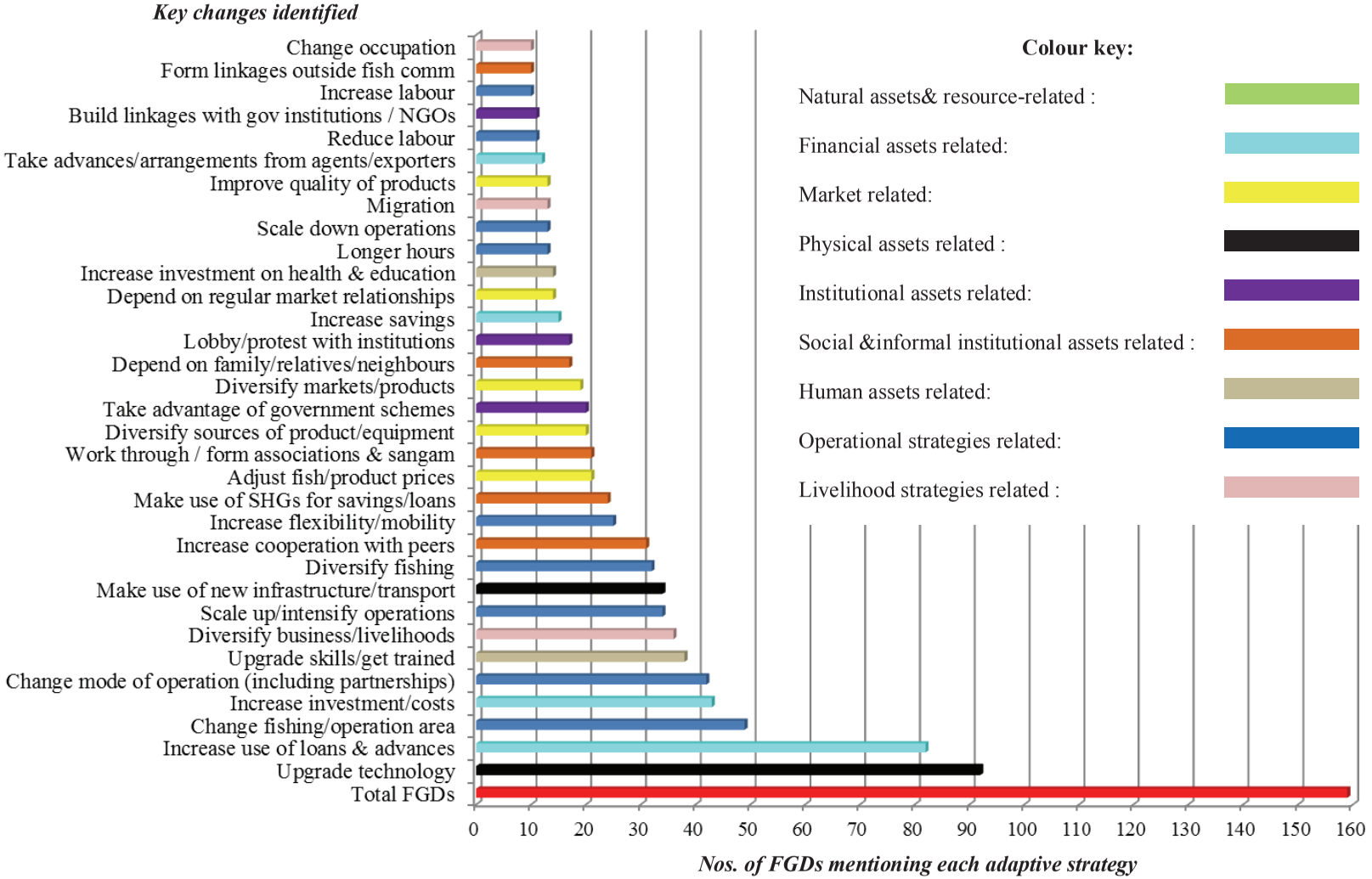


Figure 4.1.3 : Supporting factors identified during FGDs with all stakeholder groups

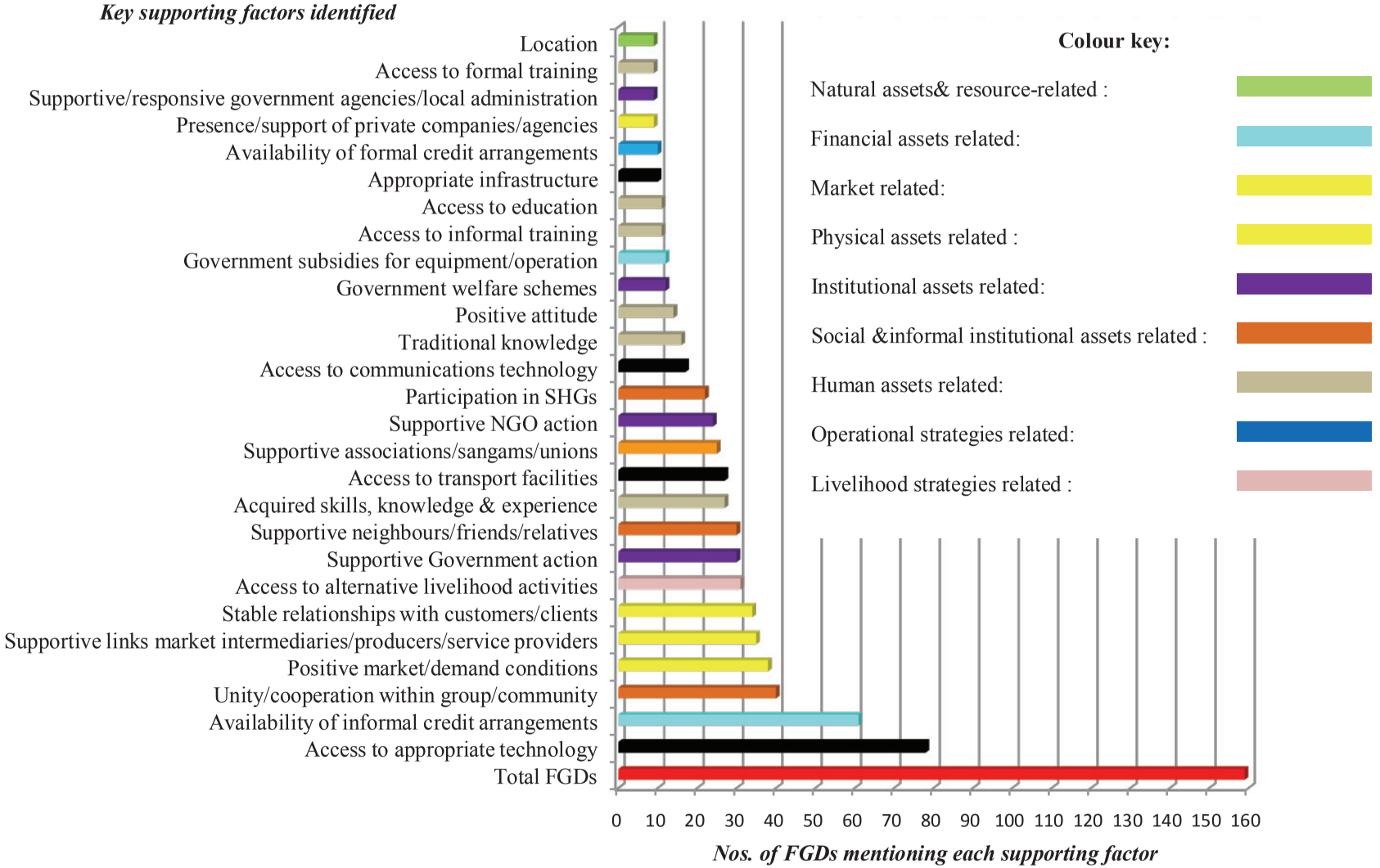
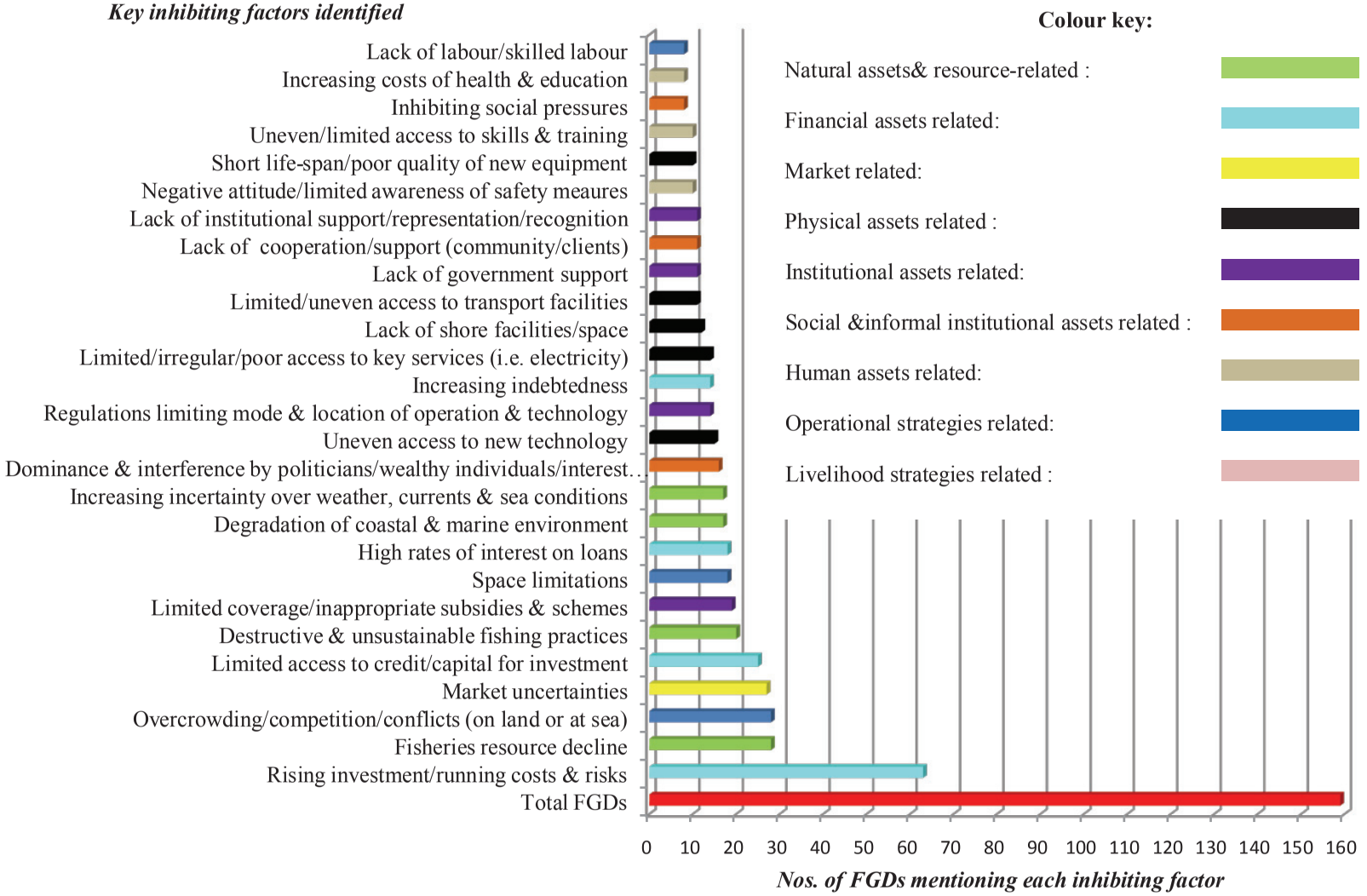


Figure 4.1.4 : Inhibiting factors identified during FGDs with all stakeholder groups



Annex 4.2 Analysis of perceptions of change and responses to change among fisher stakeholder groups

(All fisher groups, FRP boat owners, trawler owners, traditional craft operators, fishing crew)

Annex 4.2.1 Analysis across all fisher stakeholder groups

Figure 4.2.1.1 : Key livelihood changes identified during FGDs with fisher groups

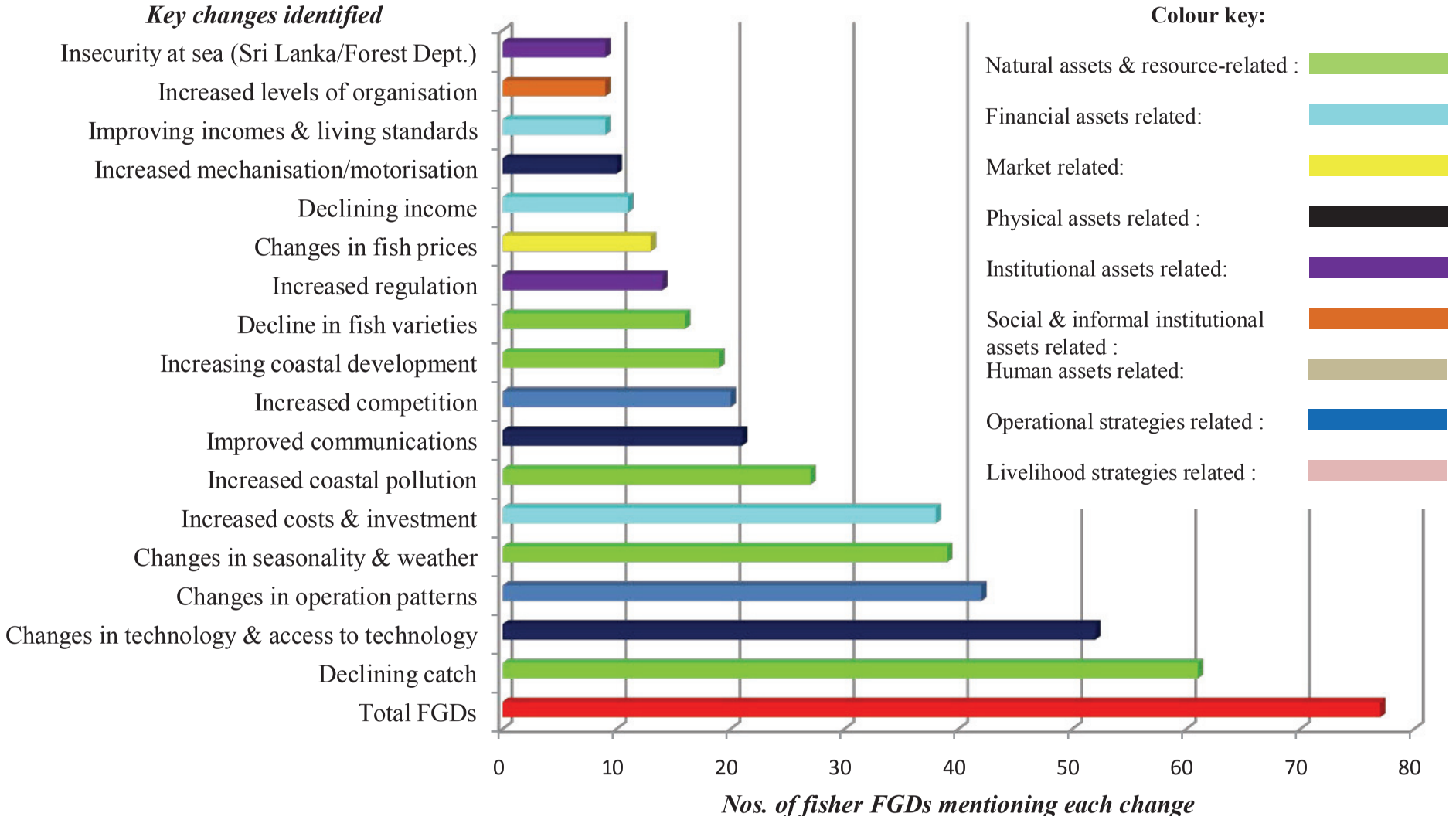


Figure 4.2.1.2 : Adaptive strategies identified during FGDs with fishers groups

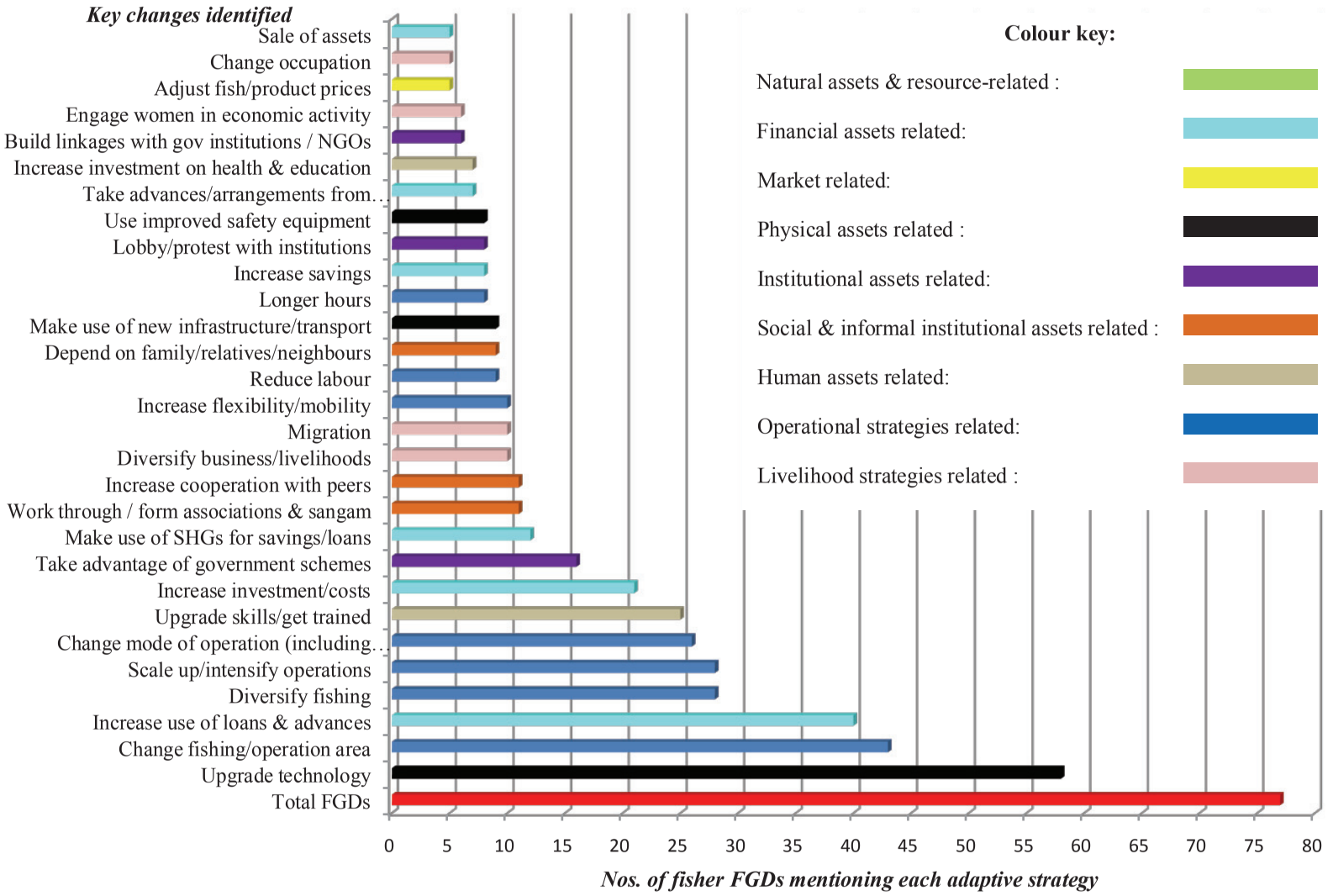


Figure 4.2.1.3 : Supporting factors identified during FGDs with fisher groups

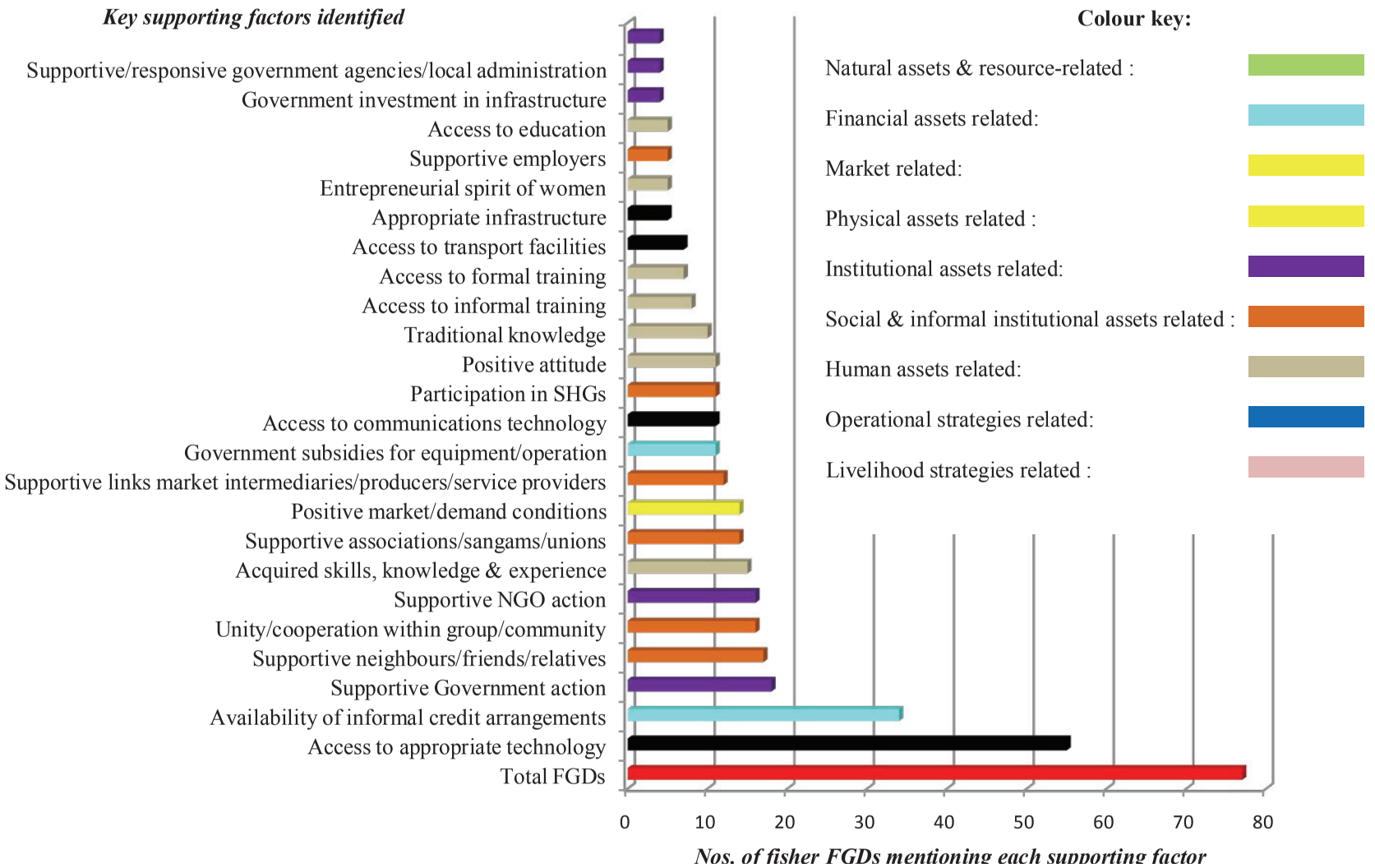
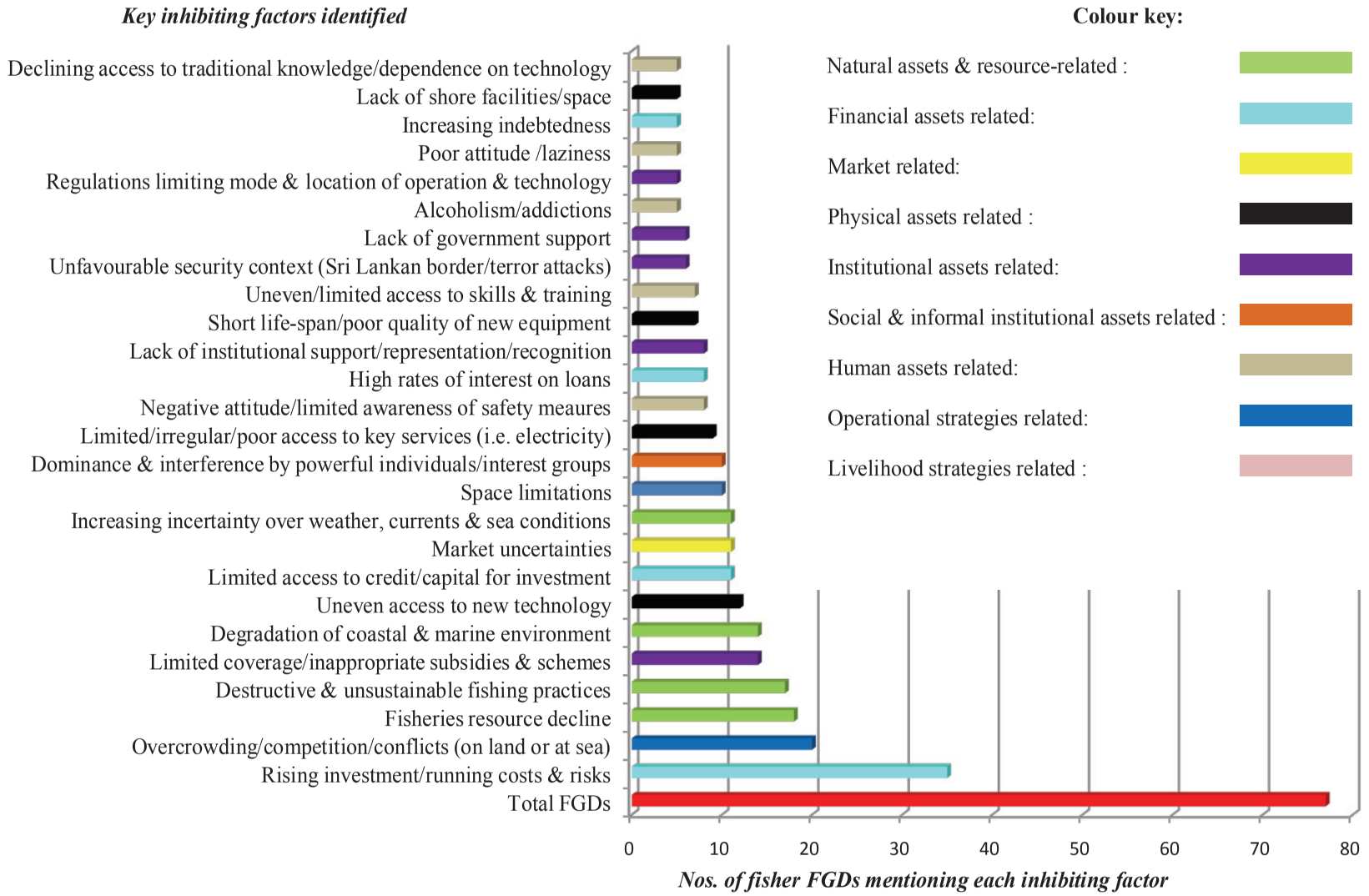


Figure 4.2.1.4 : Inhibiting factors identified during FGDs with fisher groups



Analysis of perceptions of change and responses to change among fisher stakeholder groups

Annex 4.2.2 Analysis among FRP boat owners groups

Figure 4.2.2.1 : Key livelihood changes identified during FGDs with FRP boat owners

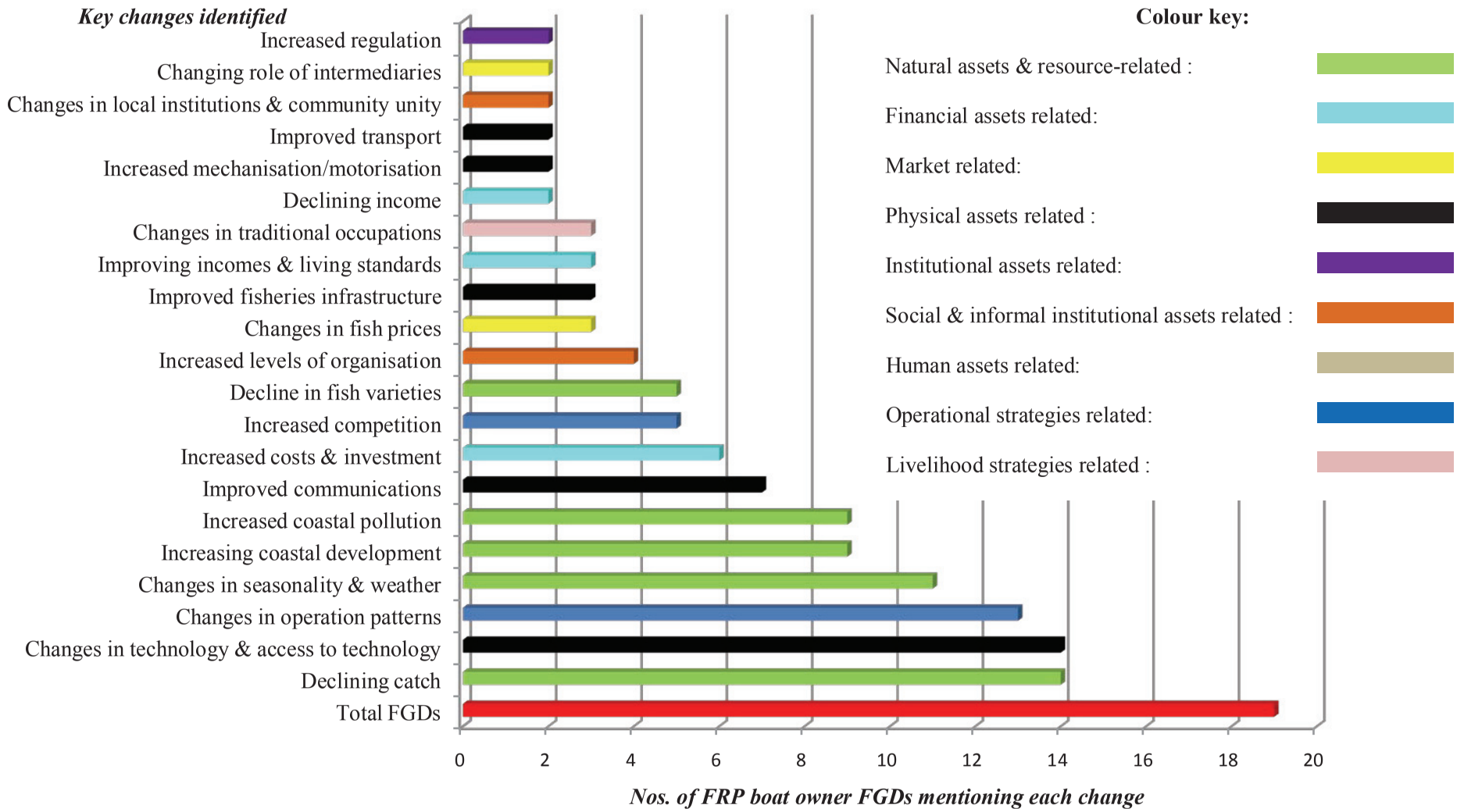


Figure 4.2.2.2 : Adaptive strategies identified during FGDs with FRP boat owners

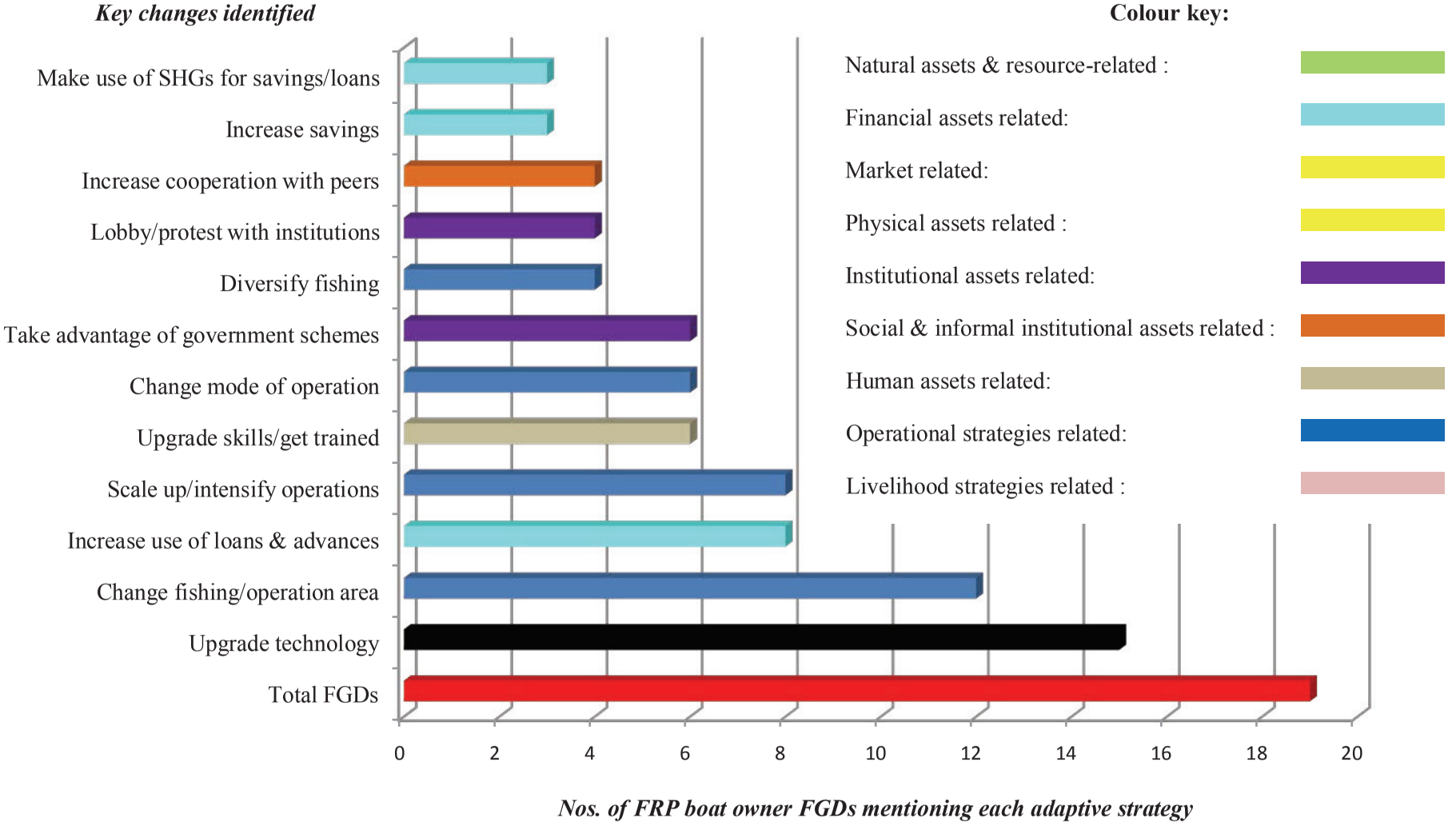


Figure 4.2.2.3 : Supporting factors identified during FGDs with FRP boat owners

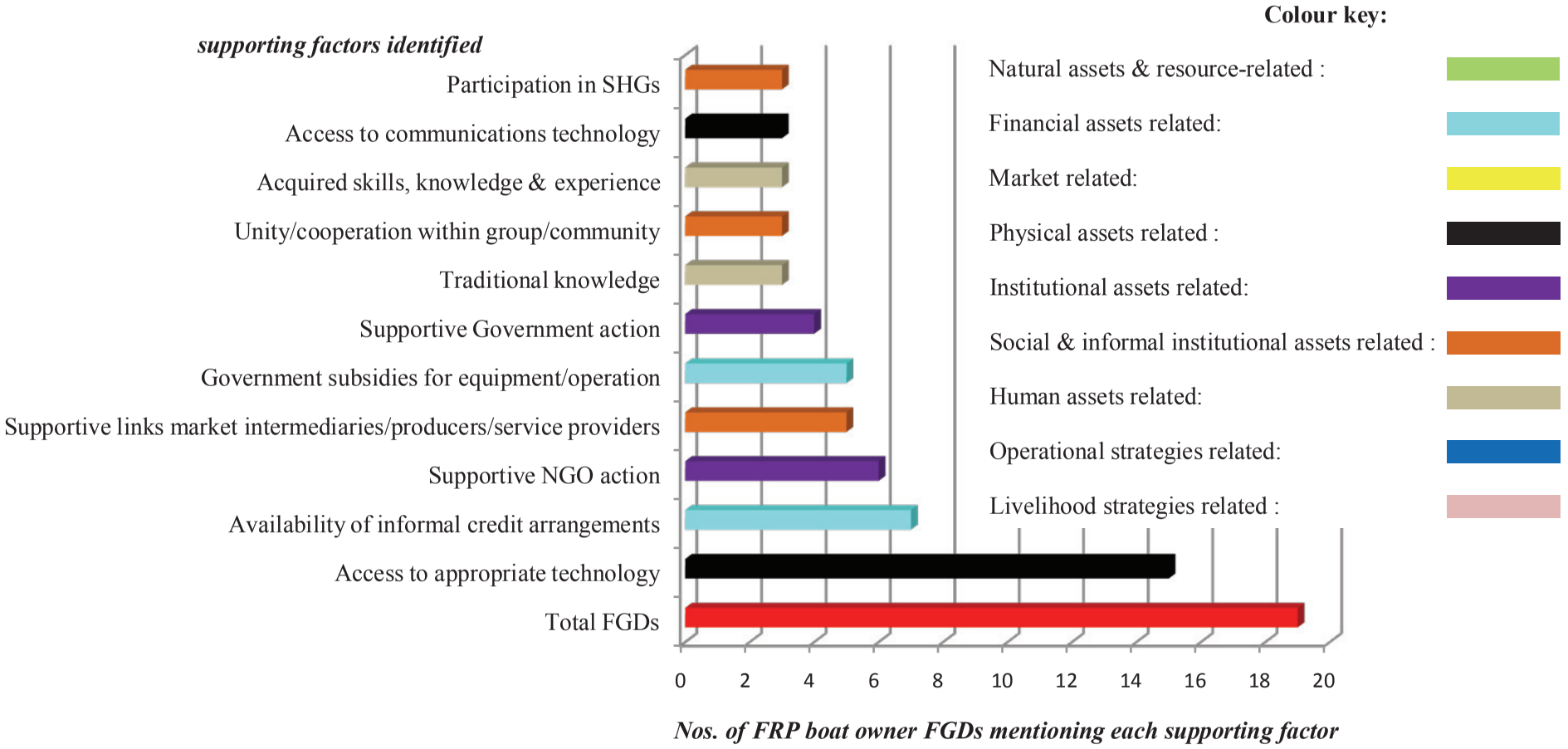
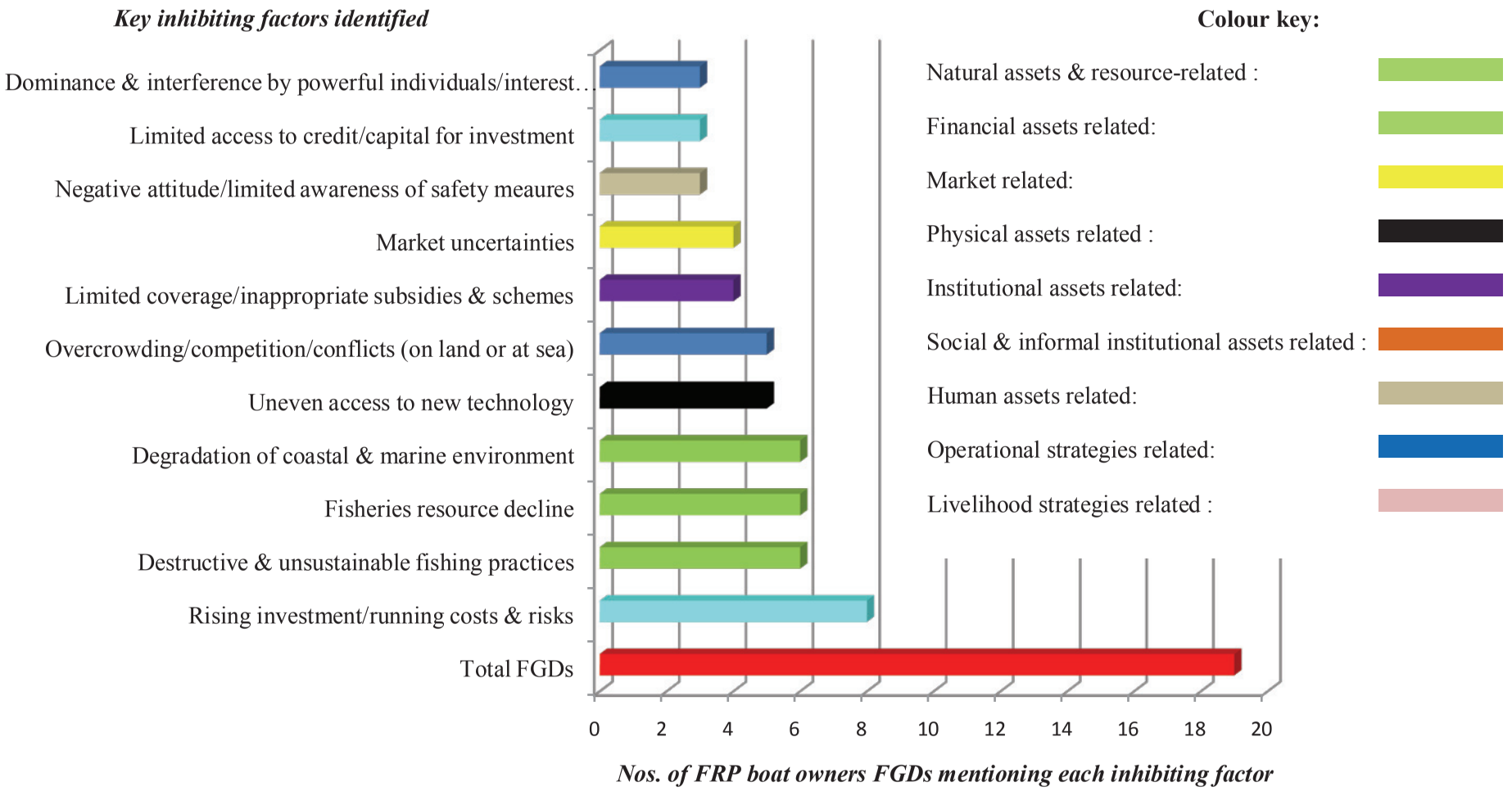


Figure 4.2.2.4 : Inhibiting factors identified during FGDs with FRP boat owners



Analysis of perceptions of change and responses to change among fisher stakeholder groups

Annex 4.2.3 Analysis among trawler owners groups

Figure 4.2.3.1 : Key livelihood changes identified during FGDs with trawler owners

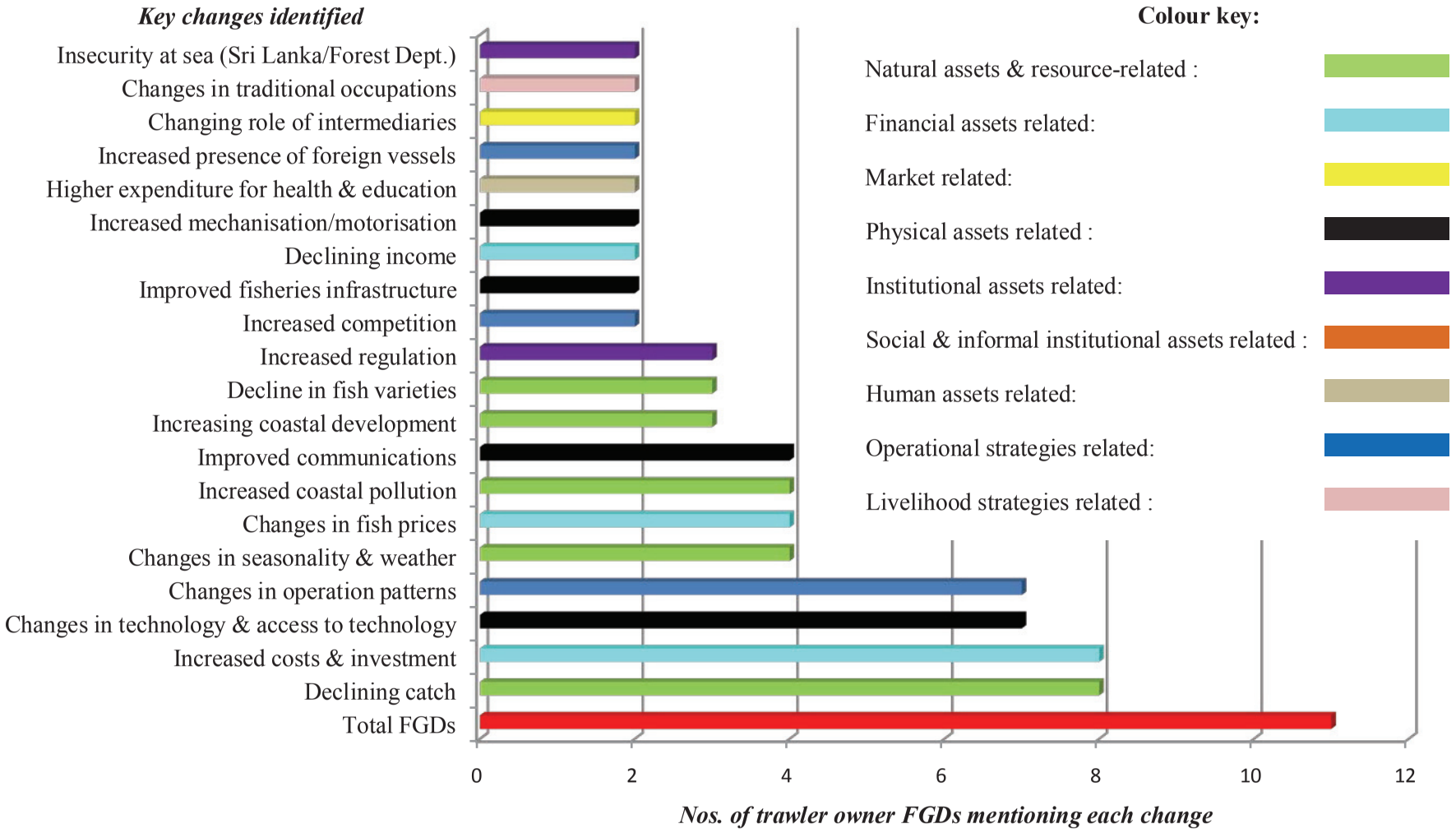


Figure 4.2.3.2 : Adaptive strategies identified during FGDs with trawler owners

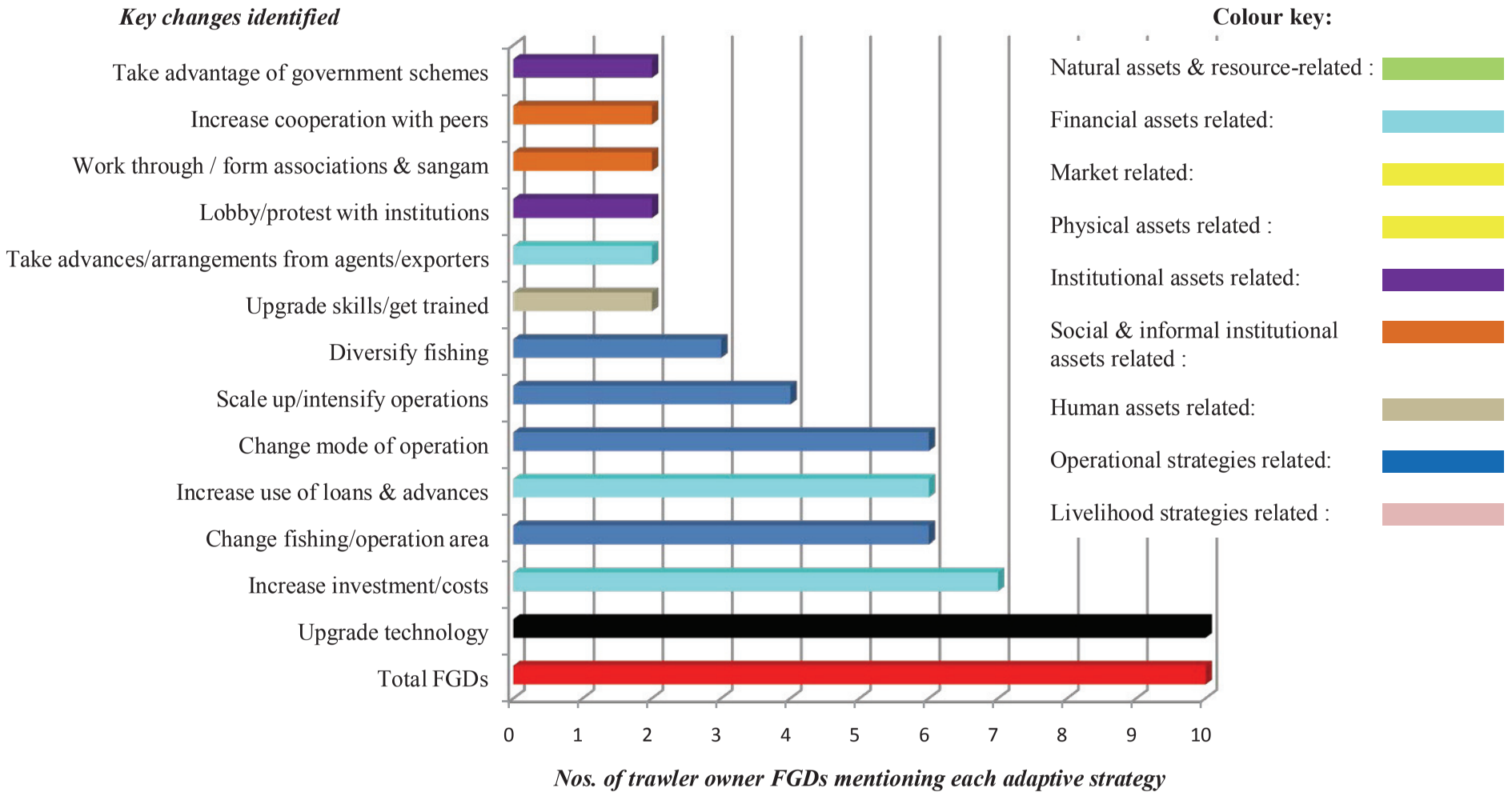


Figure 4.2.3.3 : Supporting factors identified during FGDs with trawler owners

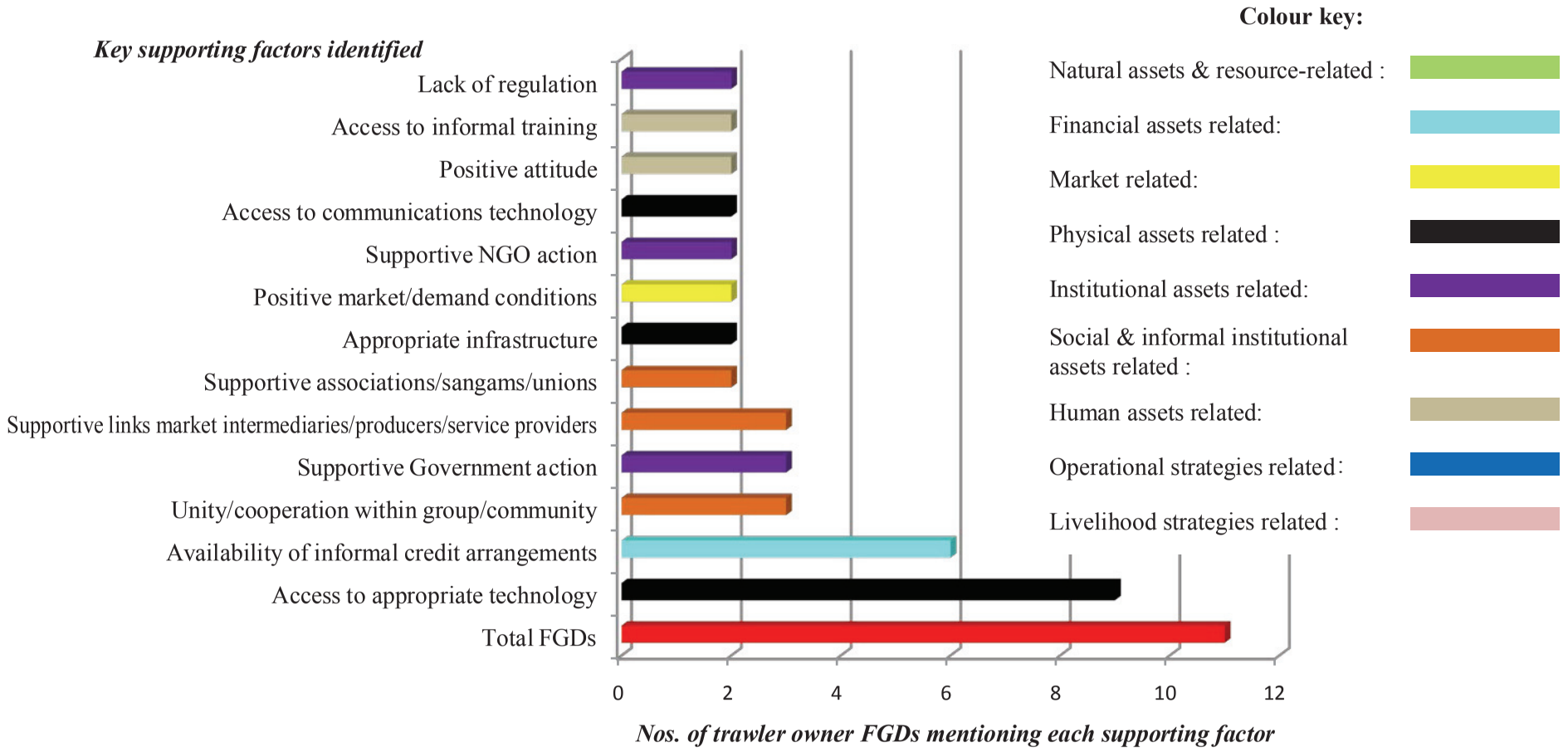
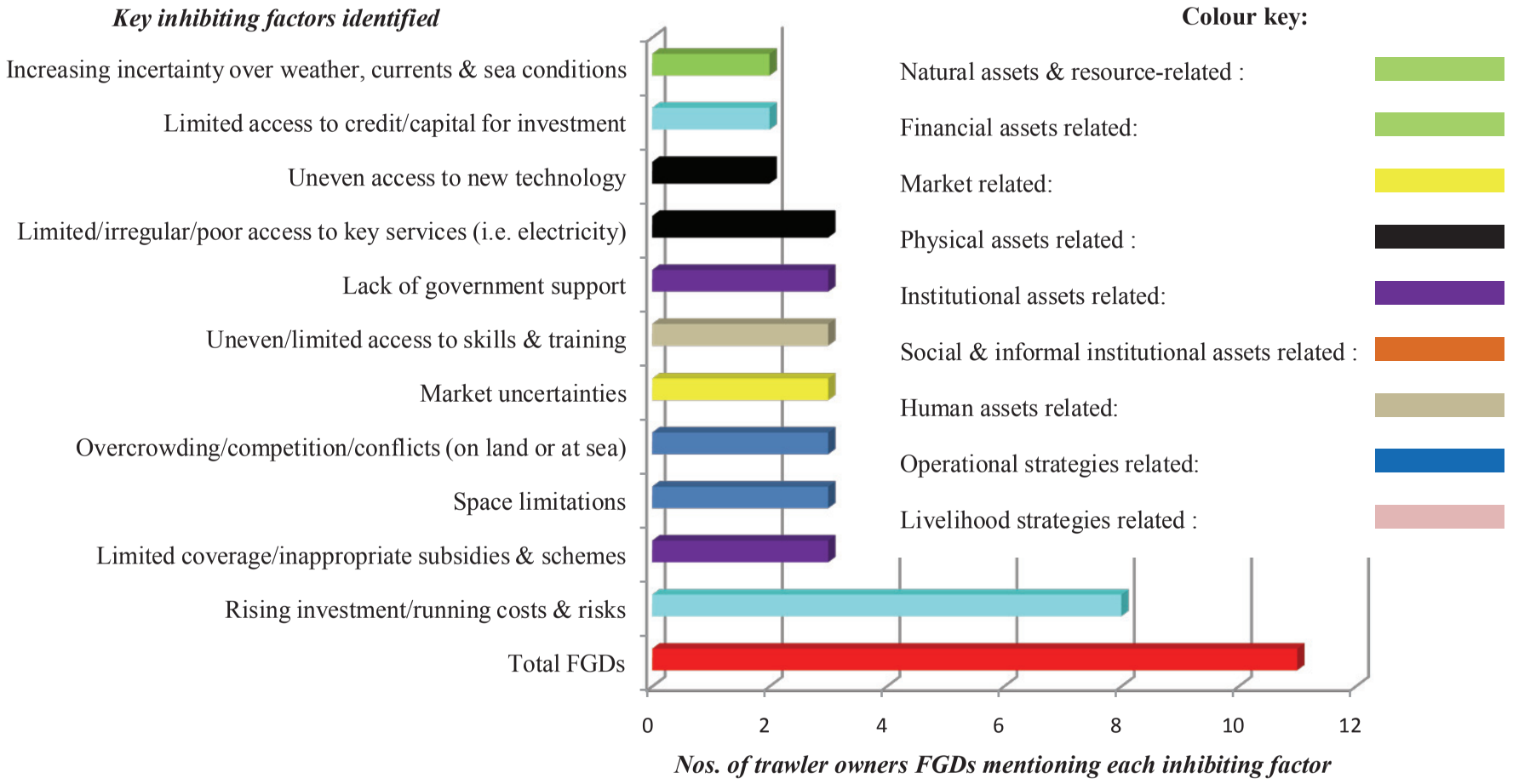


Figure 4.2.3.4 : Inhibiting factors identified during FGDs with trawler owners



Analysis of perceptions of change and responses to change among fisher stakeholder groups

Annex 4.2.4 Analysis among traditional craft operator groups

Figure 4.2.4.1 : Key livelihood changes identified during FGDs with traditional craft operators

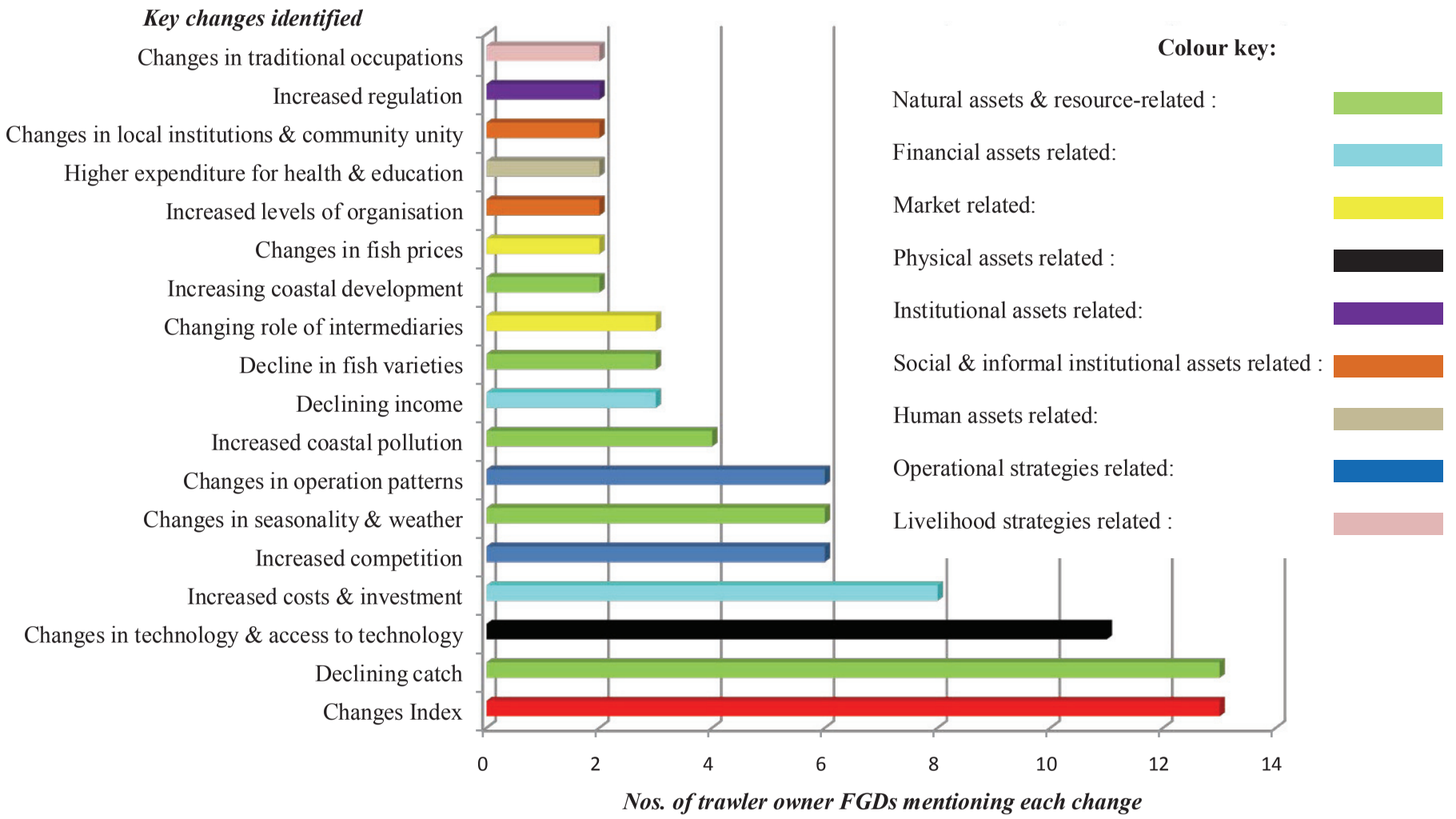


Figure 4.2.4.2 : Adaptive strategies identified during FGDs with traditional craft operators

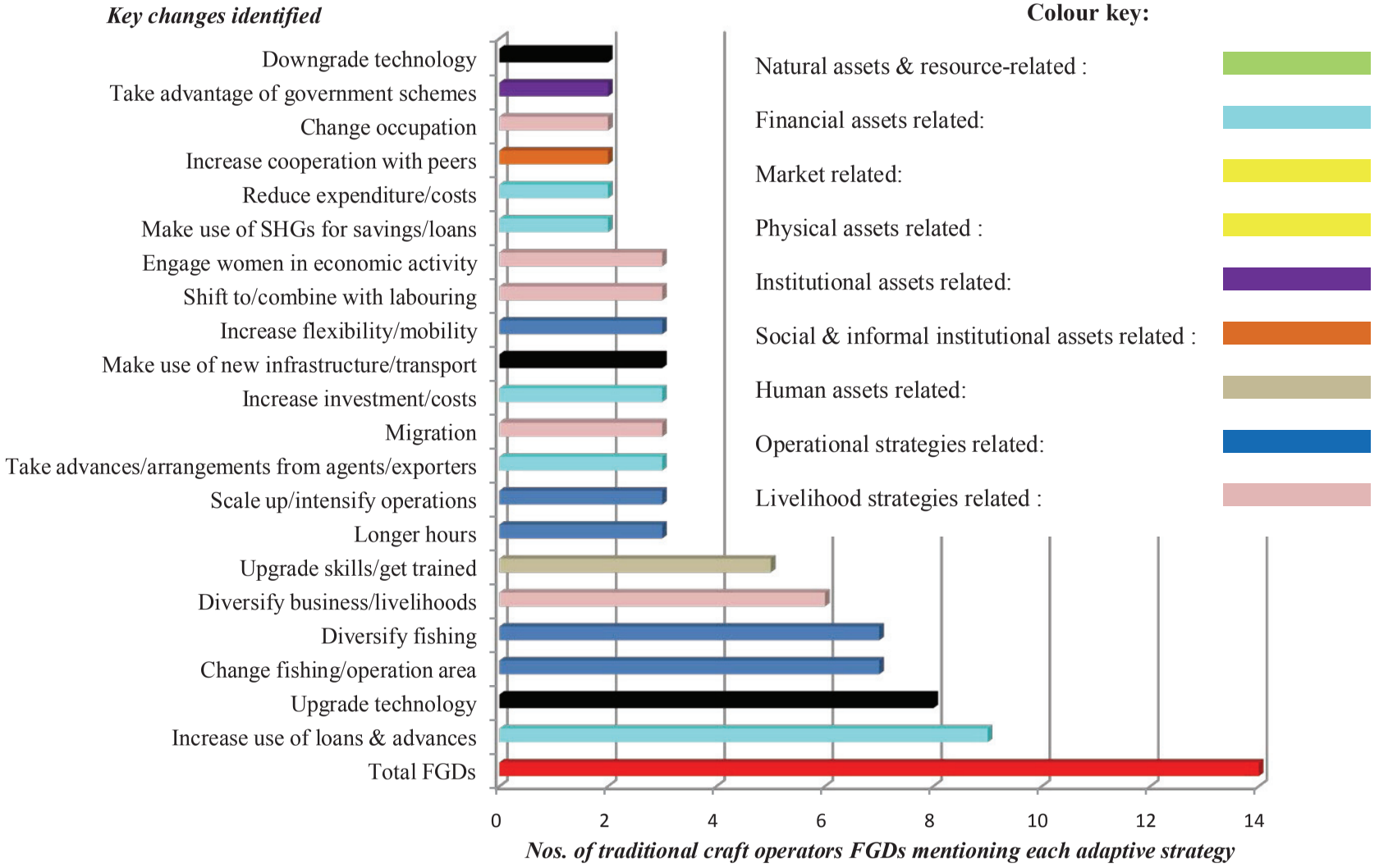


Figure 4.2.4.3 : Supporting factors identified during FGDs with traditional craft operators

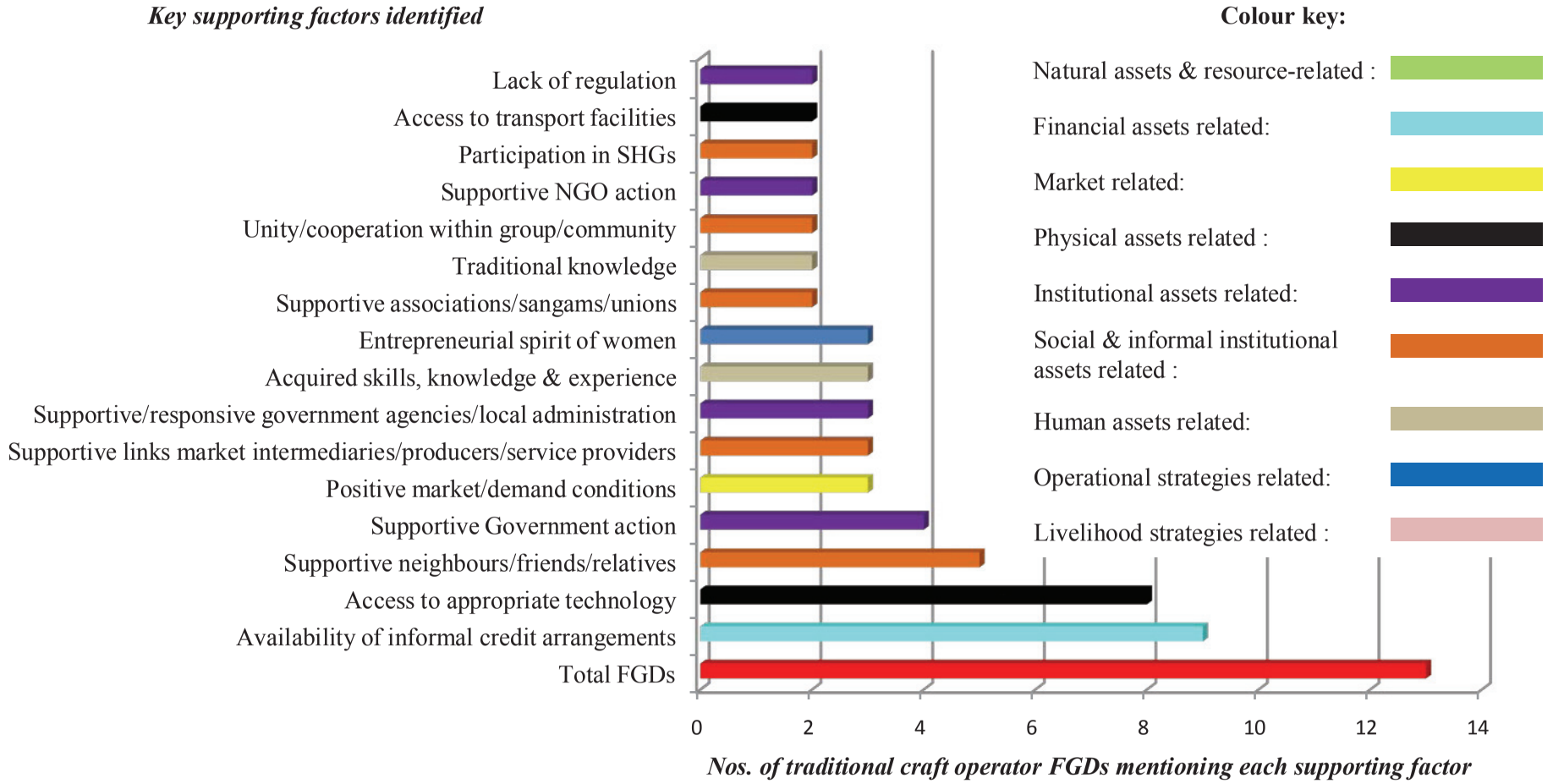
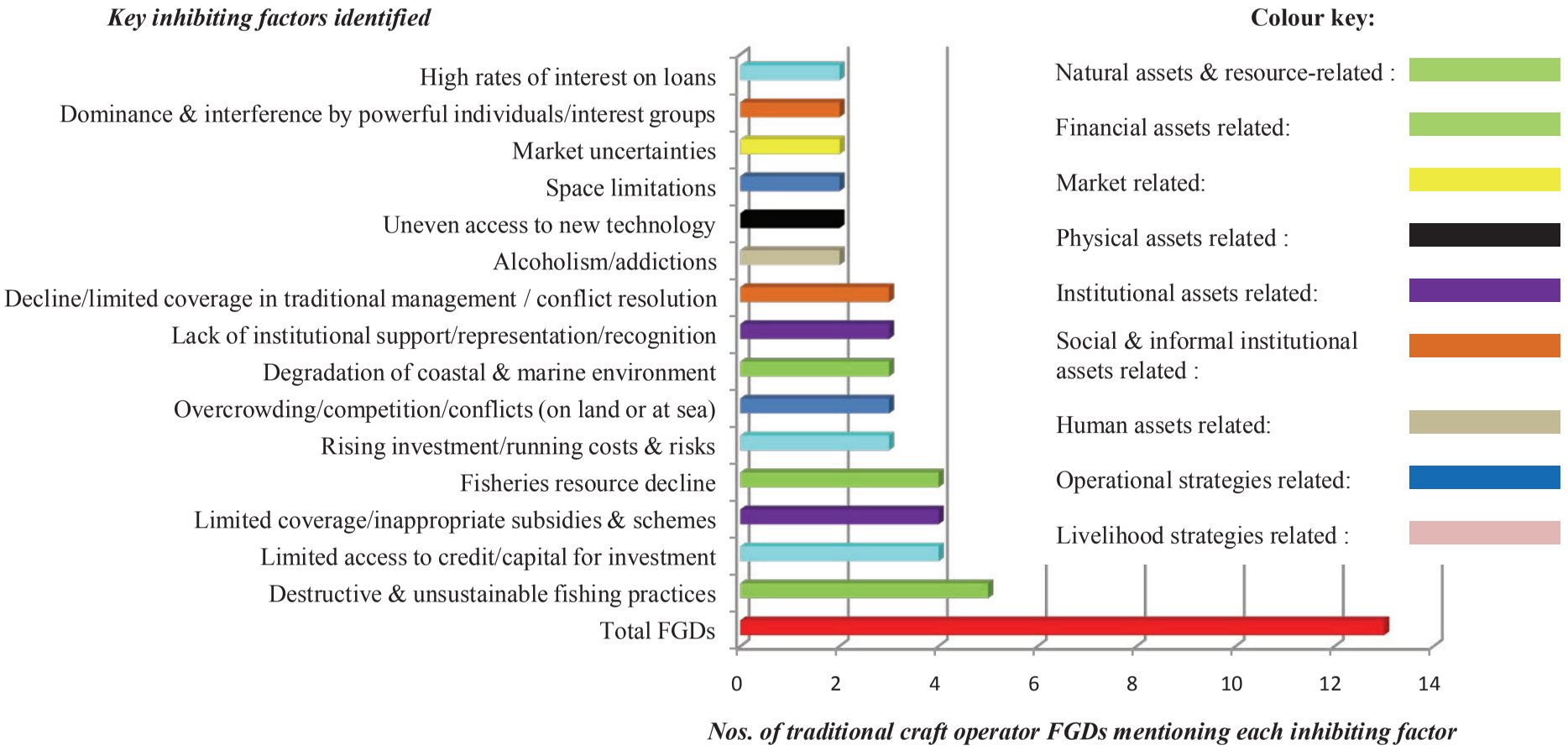


Figure 4.2.4.4 : Inhibiting factors identified during FGDs with traditional craft operators



Analysis of perceptions of change and responses to change among fisher stakeholder groups

Annex 4.2.5 Analysis among fishing crew groups

Figure 4.2.5.1 : Key livelihood changes identified during FGDs with fishing crew (FRP & trawler)

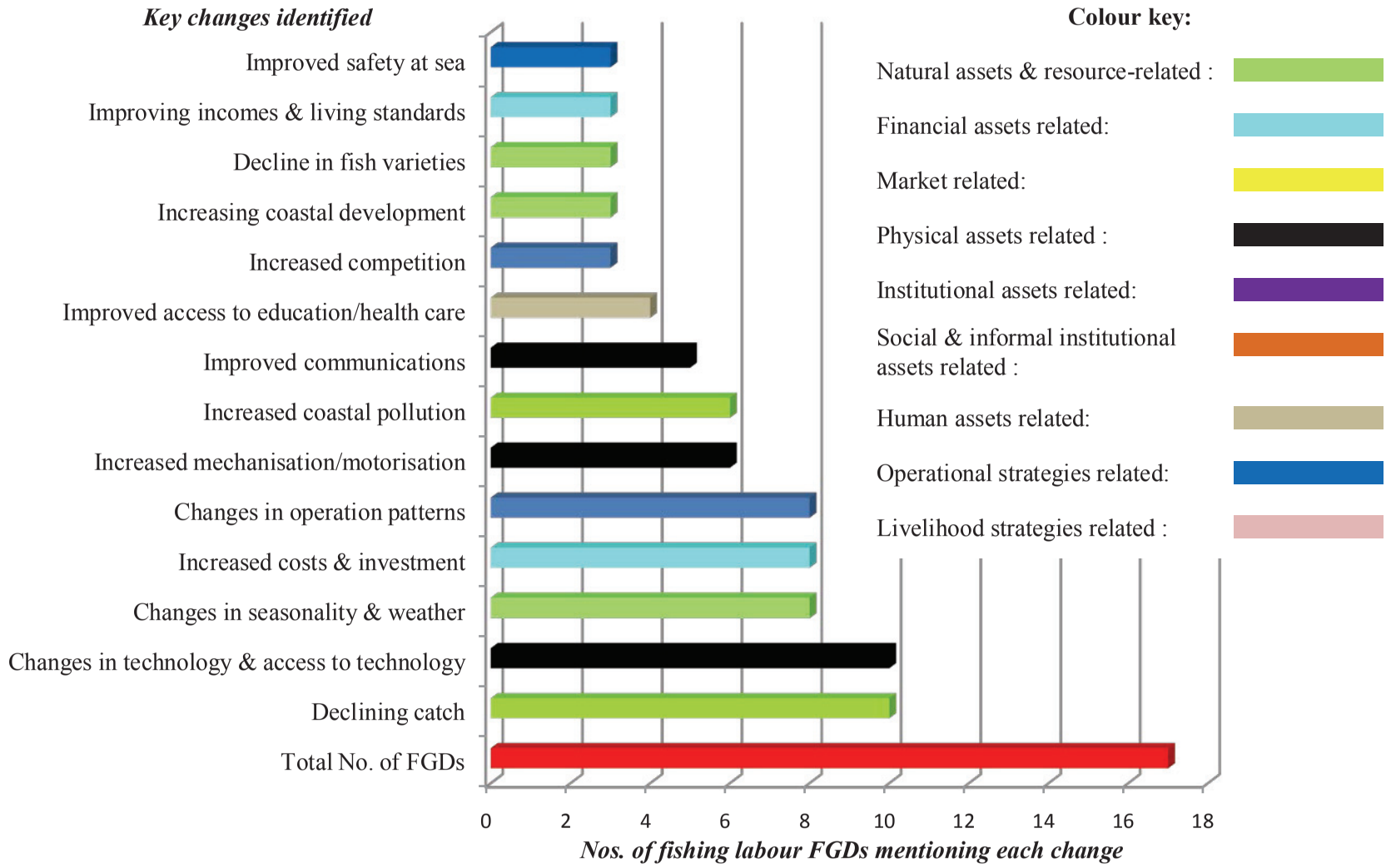


Figure 4.2.5.2 : Adaptive strategies identified during FGDs with fishing crew (FRP & trawler)

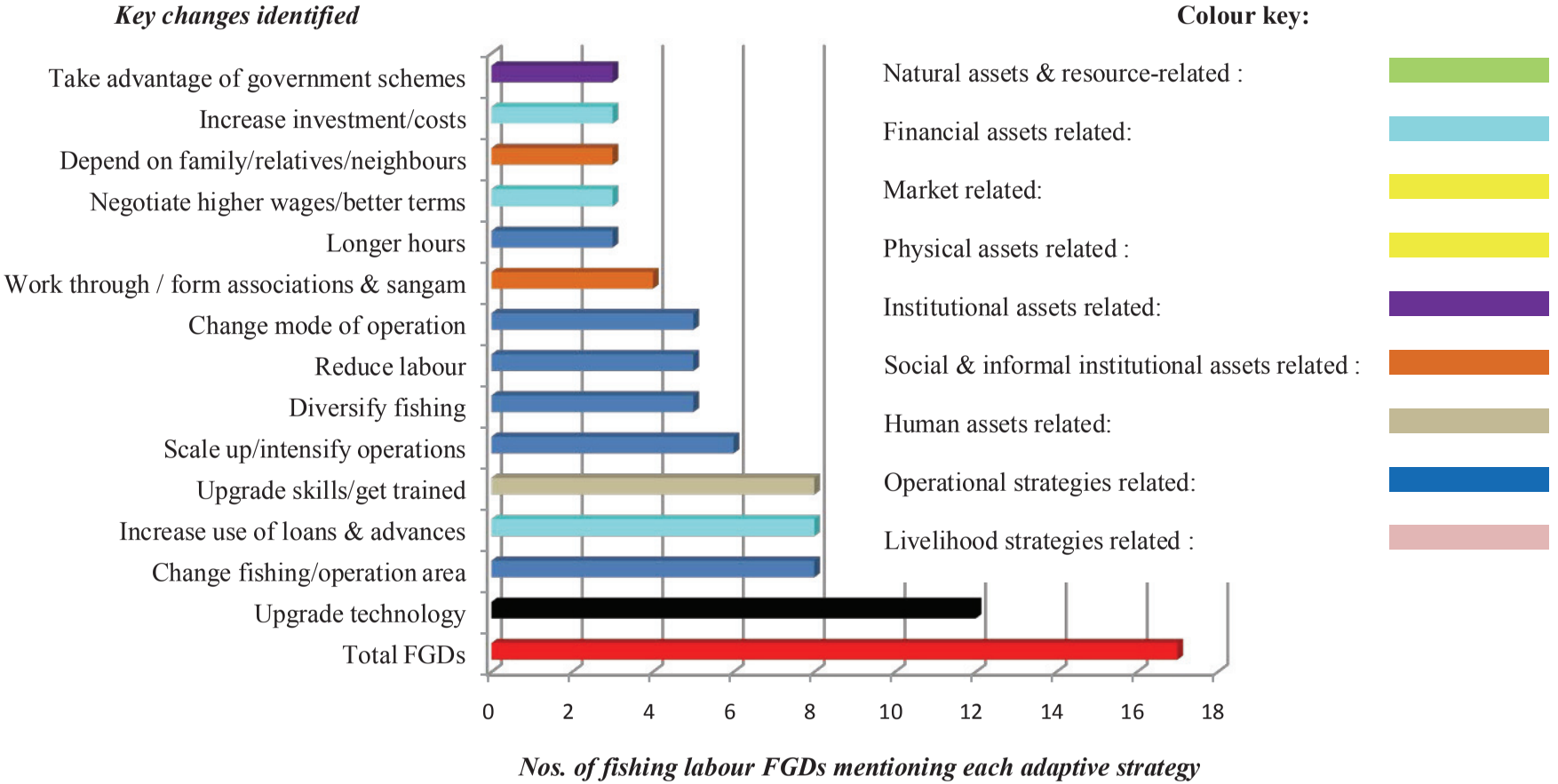


Figure 4.2.5.3 : Supporting factors identified during FGDs with fishing crew (FRP & trawler)

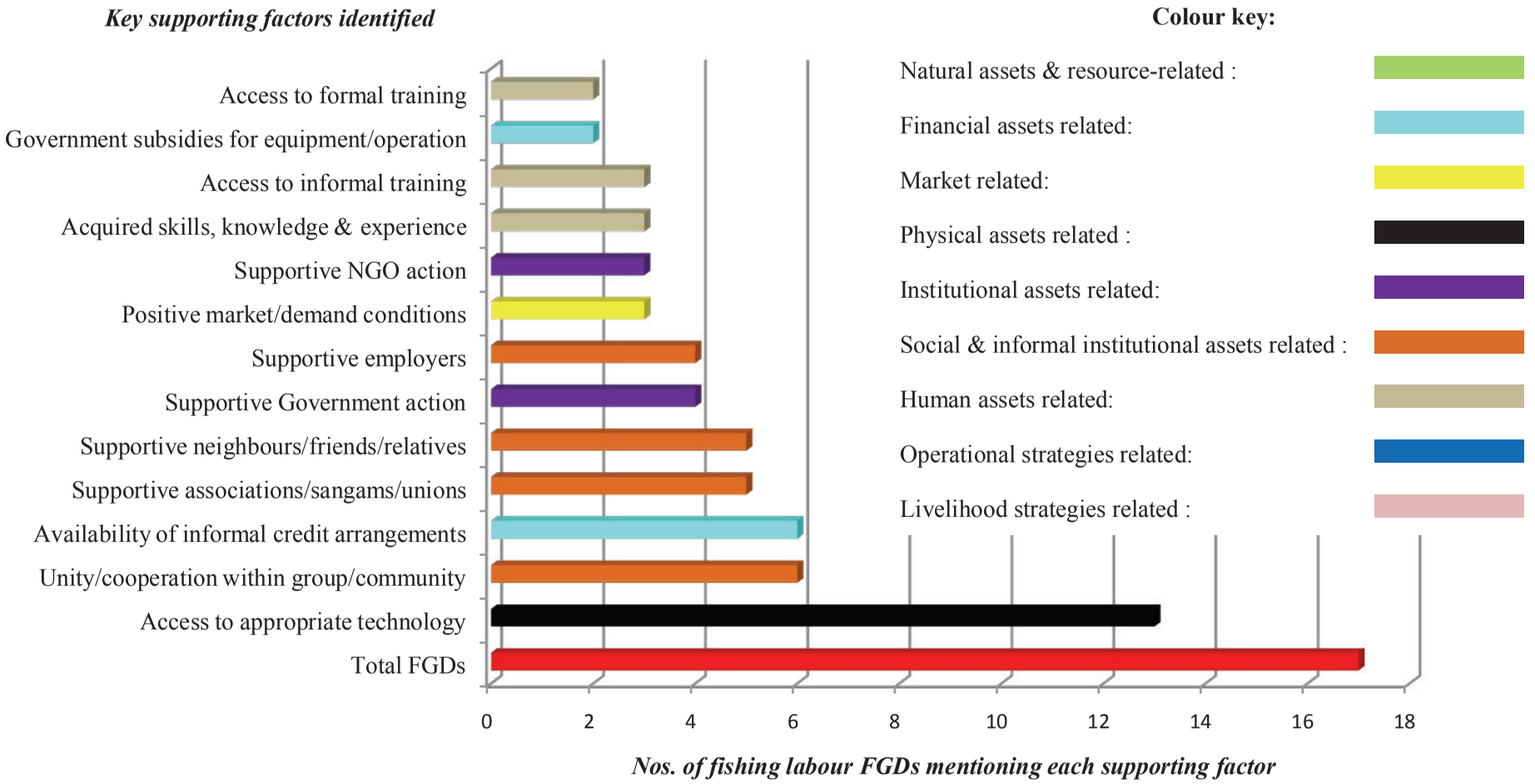
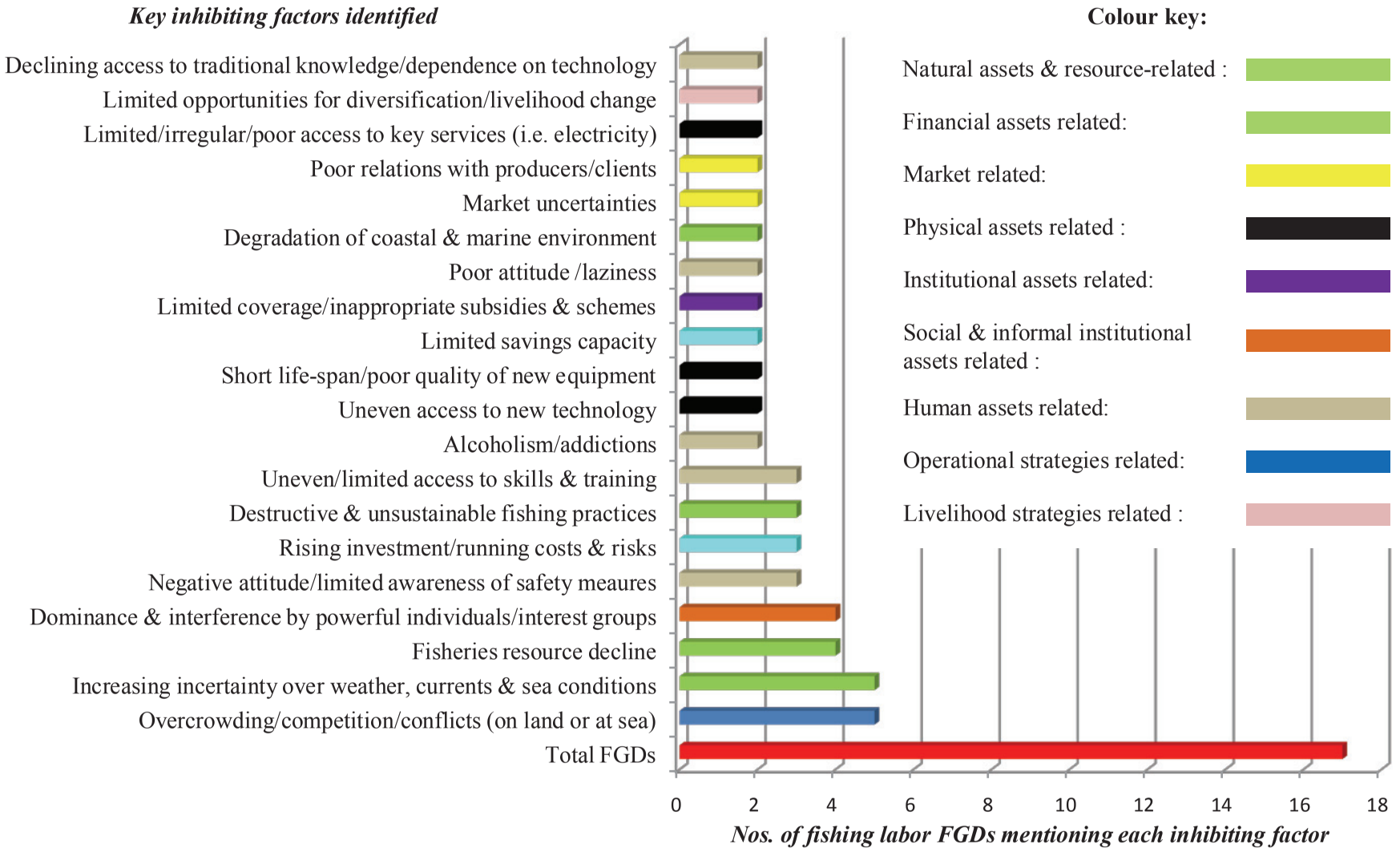


Figure 4.2.5.4 : Inhibiting factors identified during FGDs with fishing crew(FRP & trawler)



Annex 4.3 Analysis of perceptions of change and responses to change among post harvest operator stakeholder groups

(Fresh fish vendors, dry fish vendors, fish agents)

Annex 4.3.1 Analysis of perceptions of change and responses to change among post-harvest operator stakeholder groups

(Fresh fish vendors, dry fish processors and vendors, fish agents)

Figure 4.3.1.1 : Key livelihood changes identified during FGDs with post-harvest operator groups

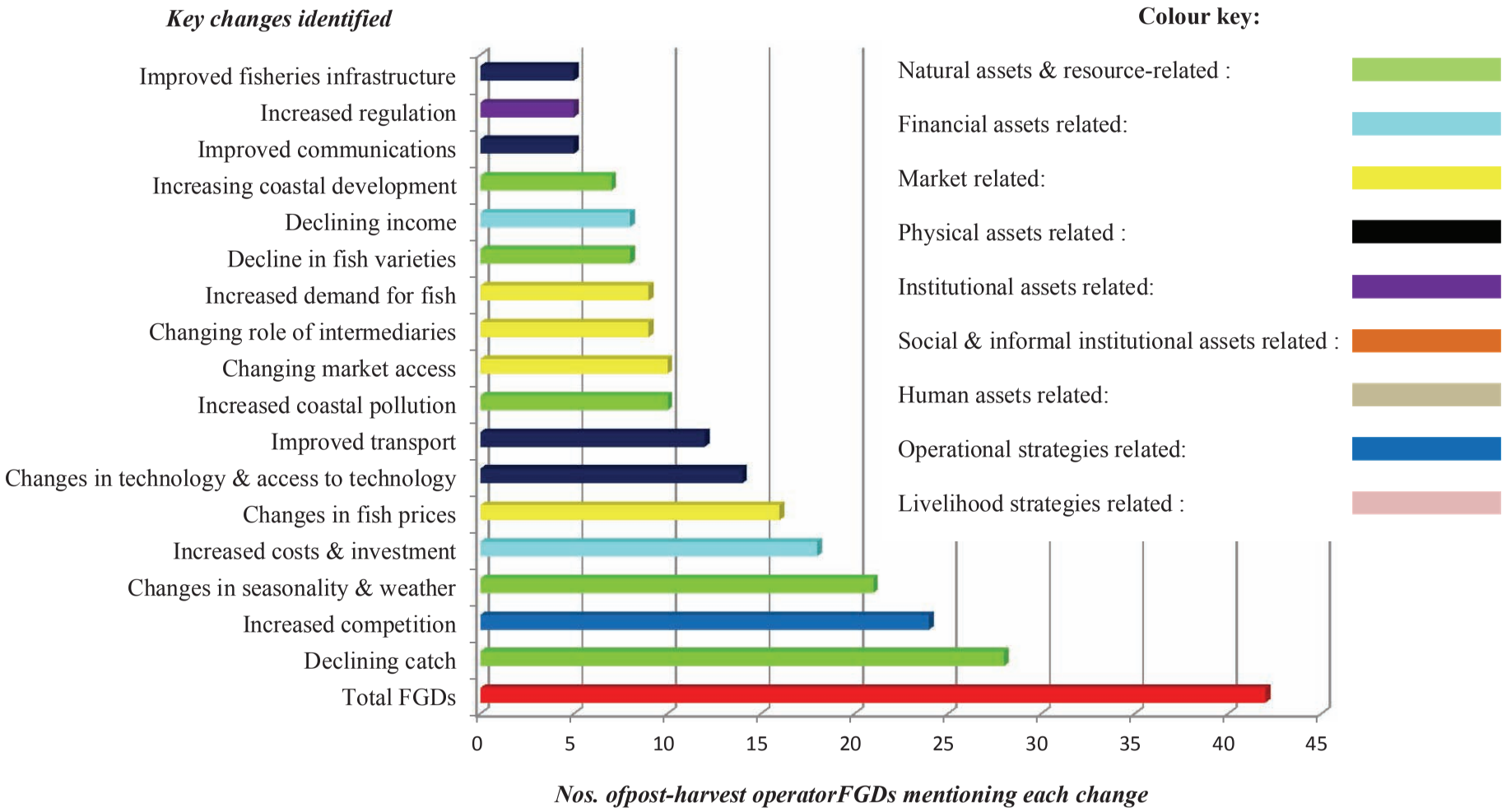


Figure 4.3.1.2 : Adaptive strategies identified during FGDs with post-harvest operator groups

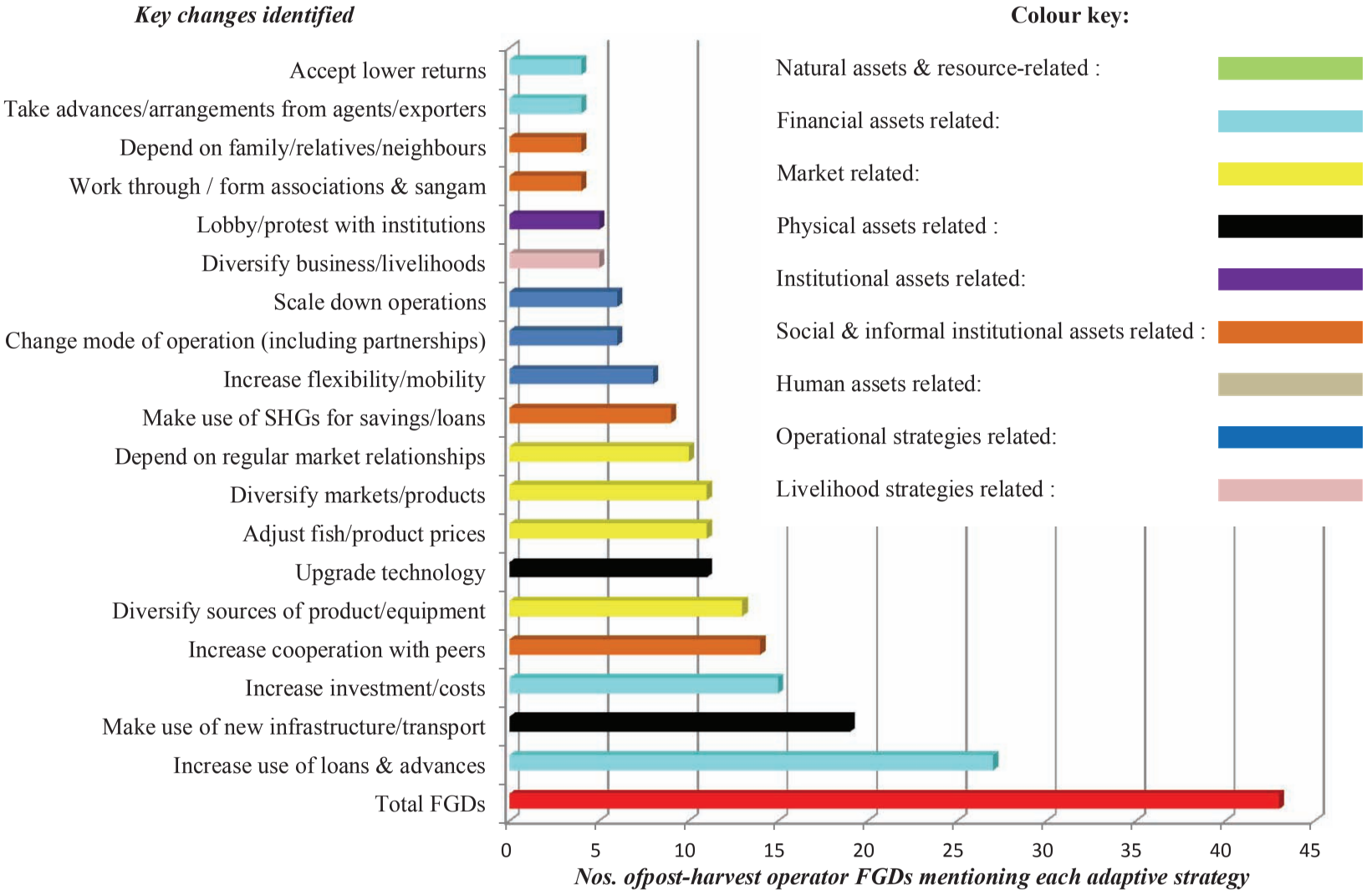


Figure 4.3.1.3 : Supporting factors identified during FGDs with post-harvest operator groups

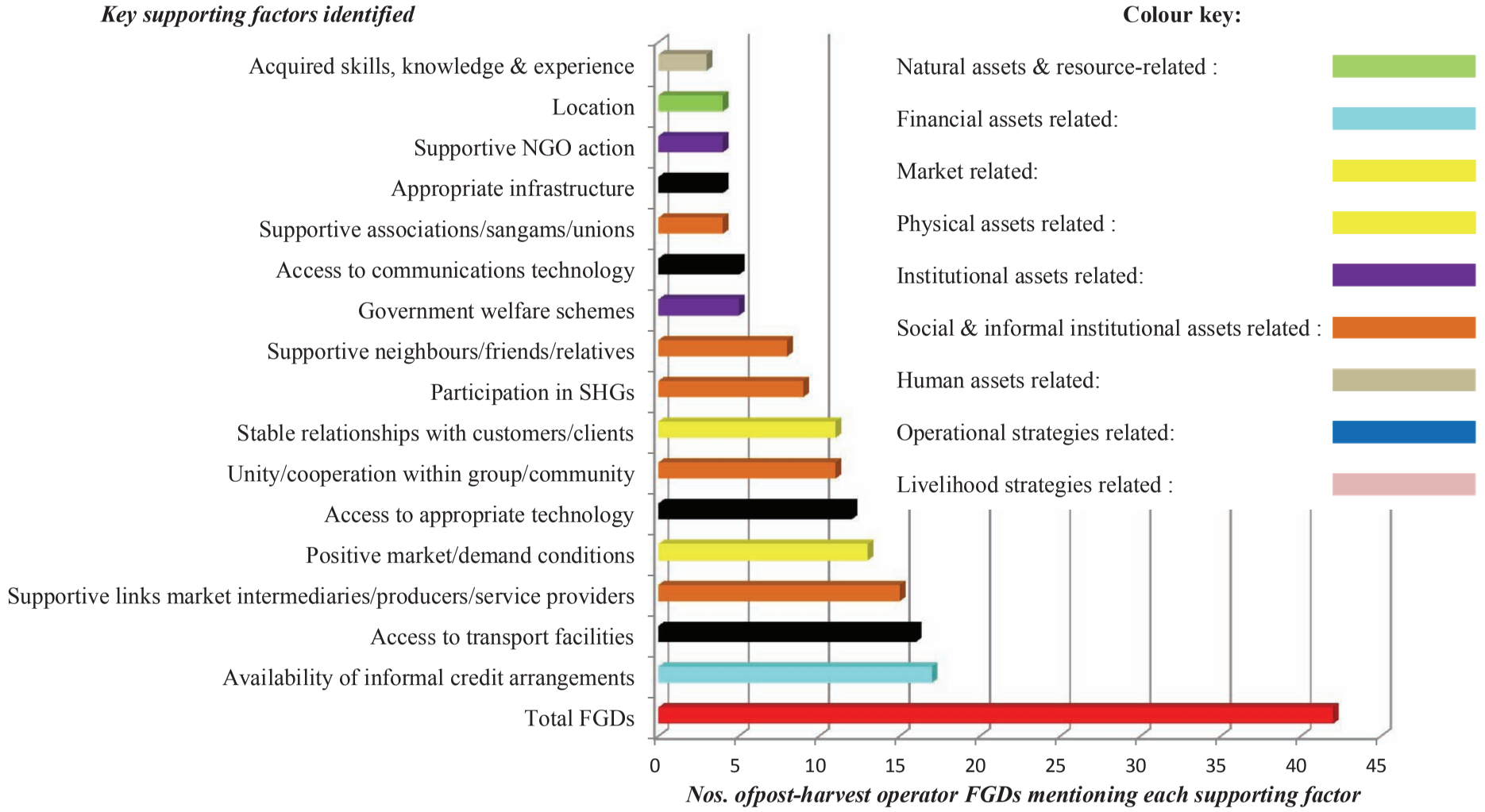
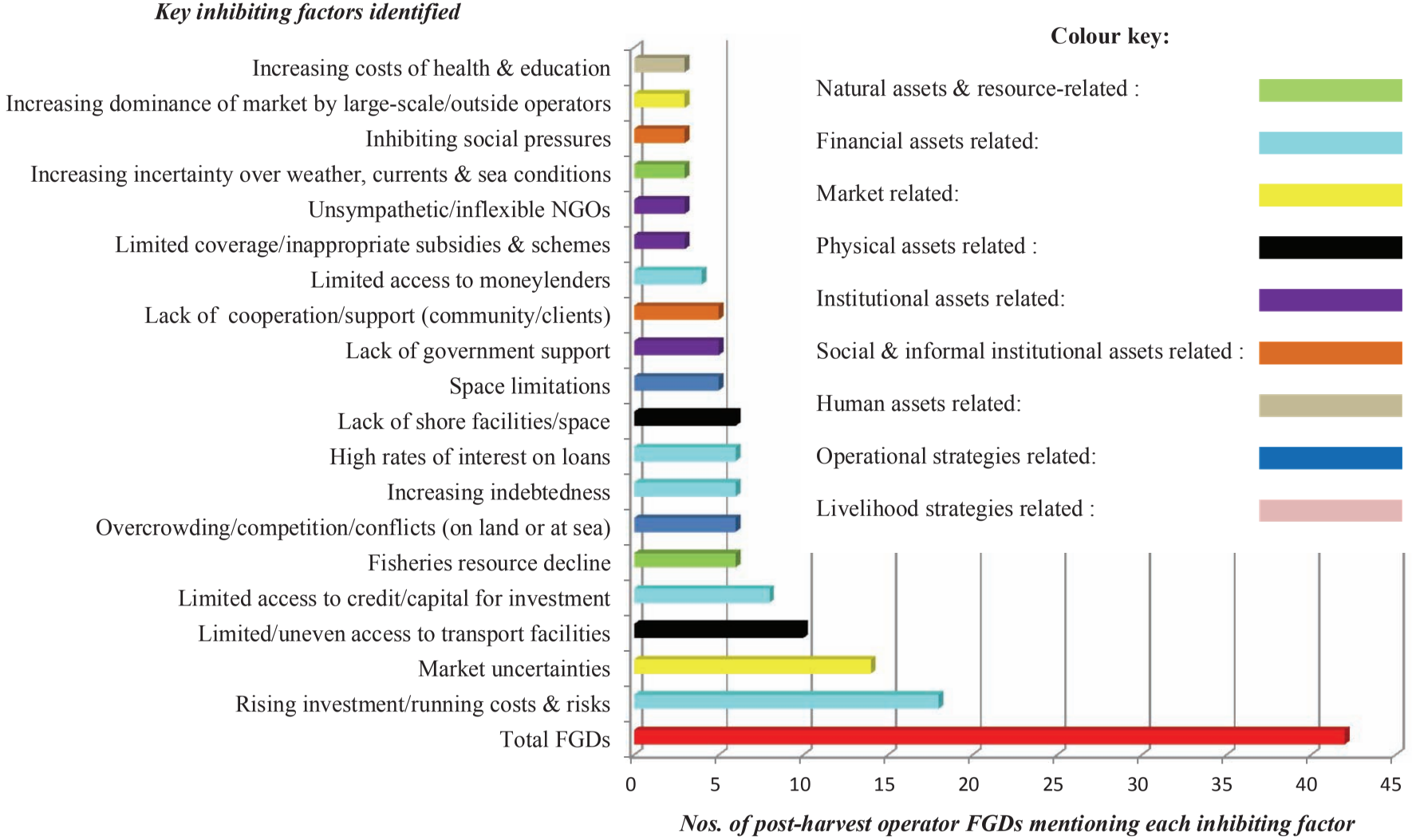


Figure 4.3.1.4 : Inhibiting factors identified during FGDs with post-harvest operator groups



Analysis of perceptions of change and responses to change among post-harvest operator stakeholder groups

Annex 4.3.2 Analysis among fresh fish vendor groups

Figure 4.3.2.1 : Key livelihood changes identified during FGDs with fresh fish vendors

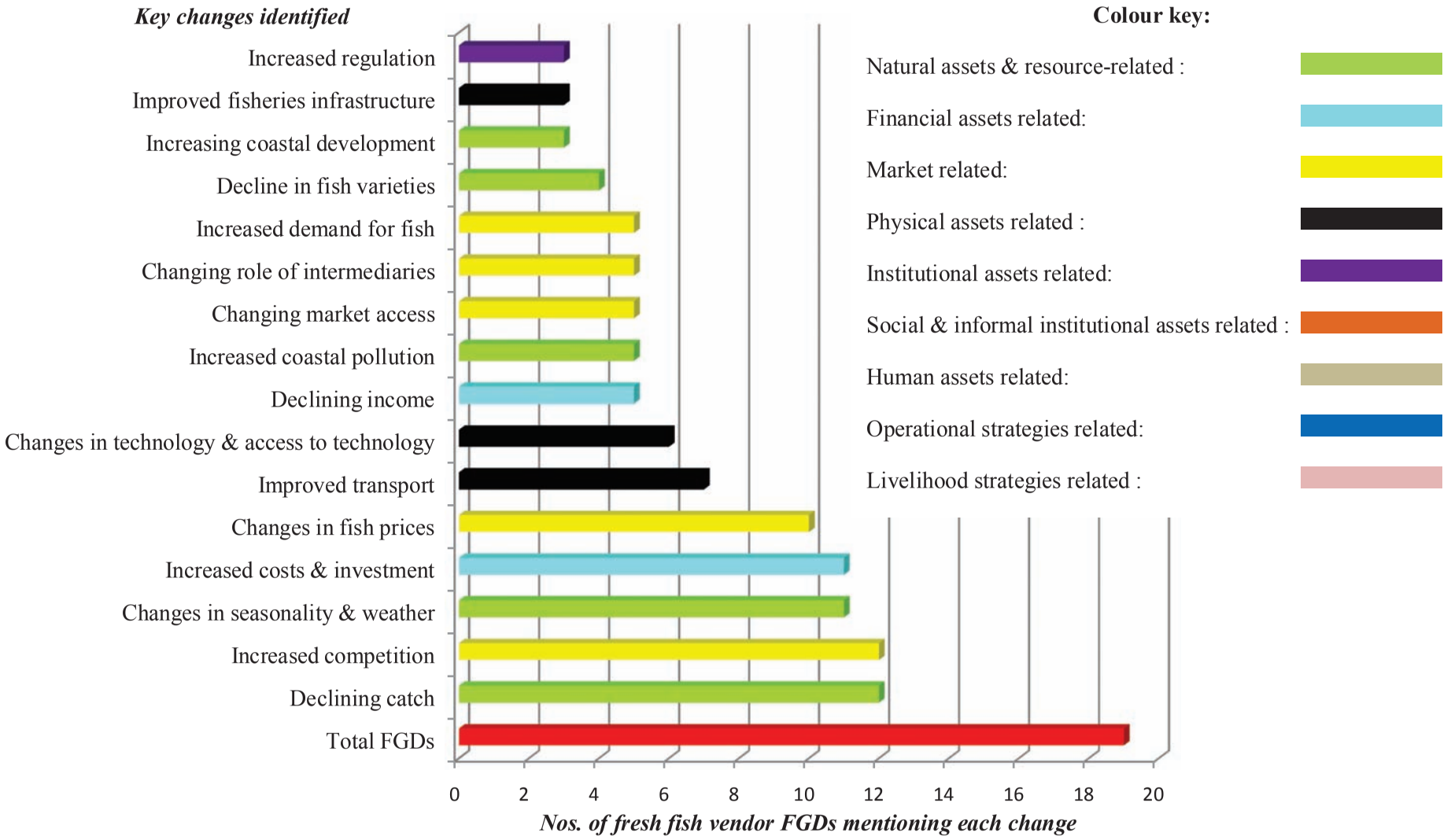


Figure 4.3.2.2 : Adaptive strategies identified during FGDs with fresh fish vendors

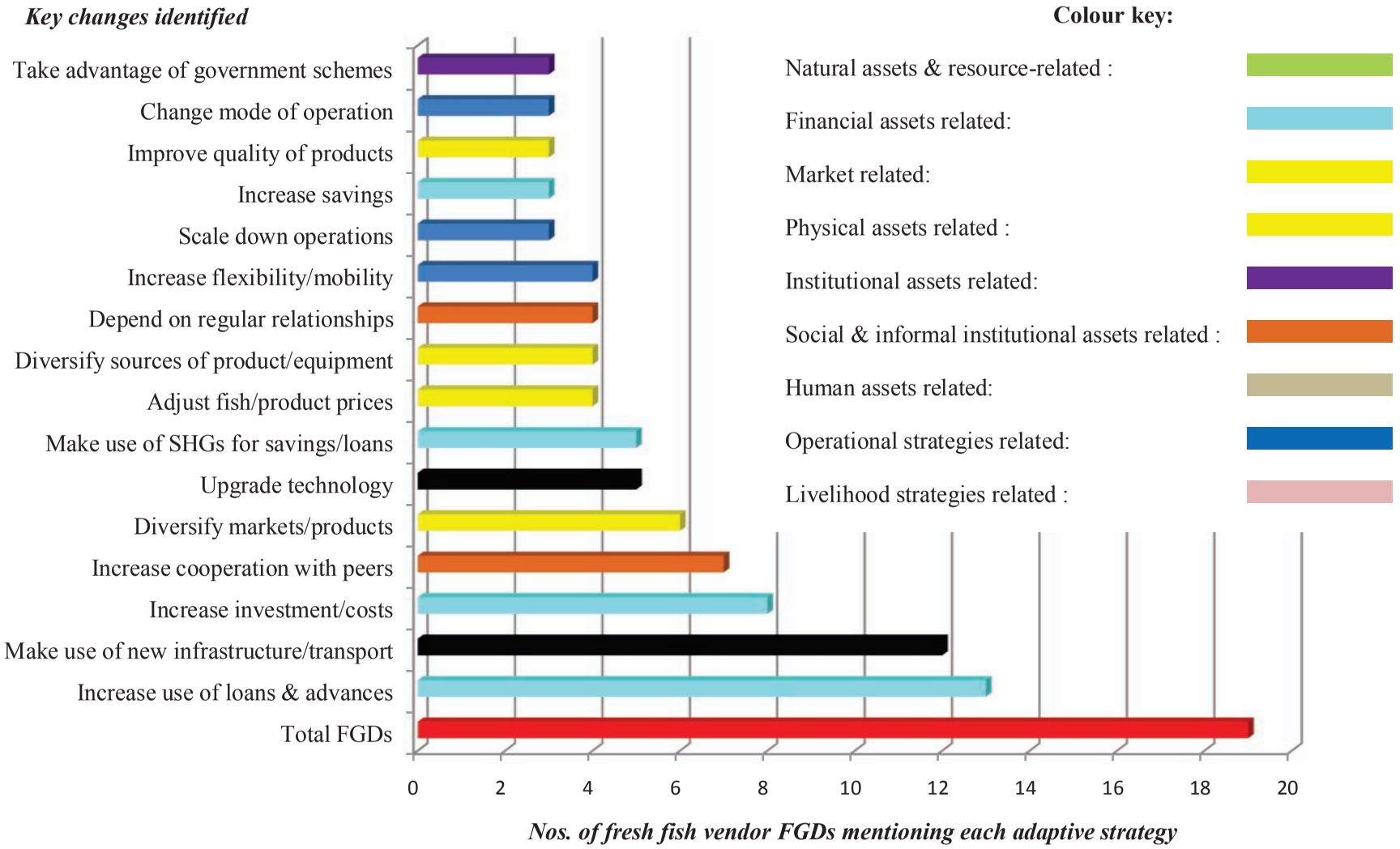


Figure 4.3.2.3 : Supporting factors identified during FGDs with fresh fish vendors

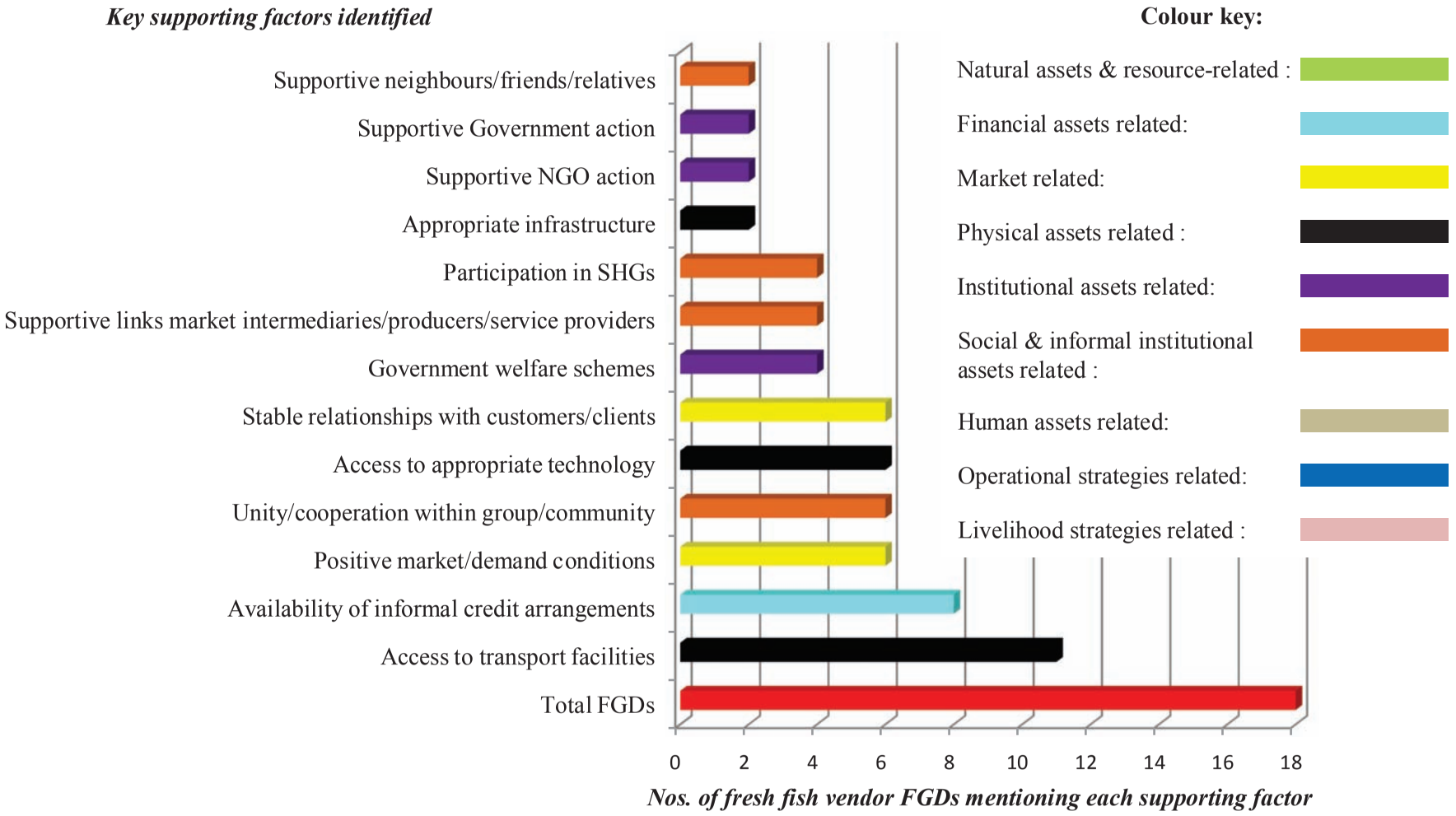
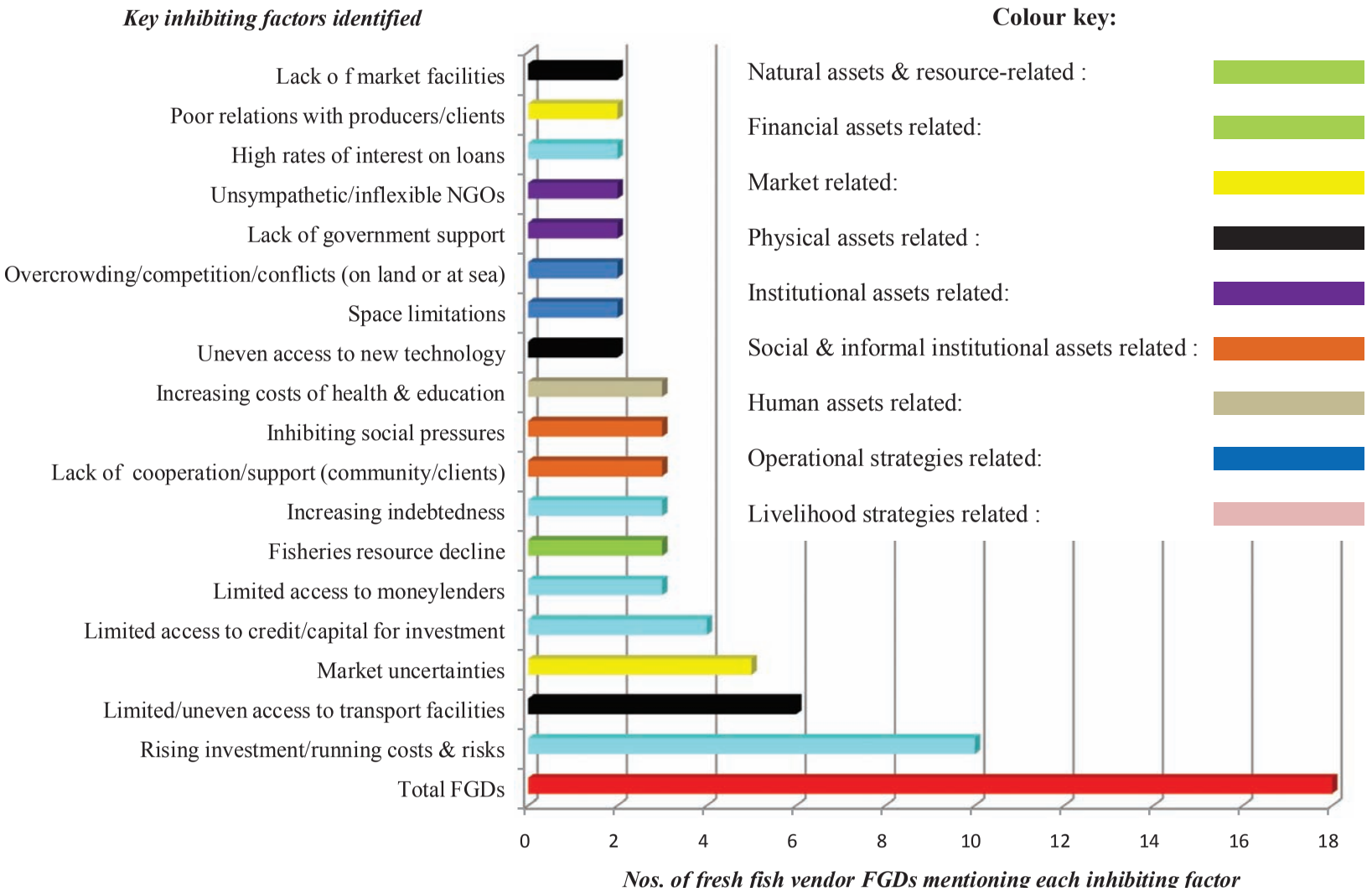


Figure 4.3.2.4 : Inhibiting factors identified during FGDs with fresh fish vendors



Analysis of perceptions of change and responses to change among post-harvest operator stakeholder groups

Annex 4.3.3 Analysis among dry fish vendor and processor groups

Figure 4.3.3.1 : Key livelihood changes identified during FGDs with dryfish vendors & processors

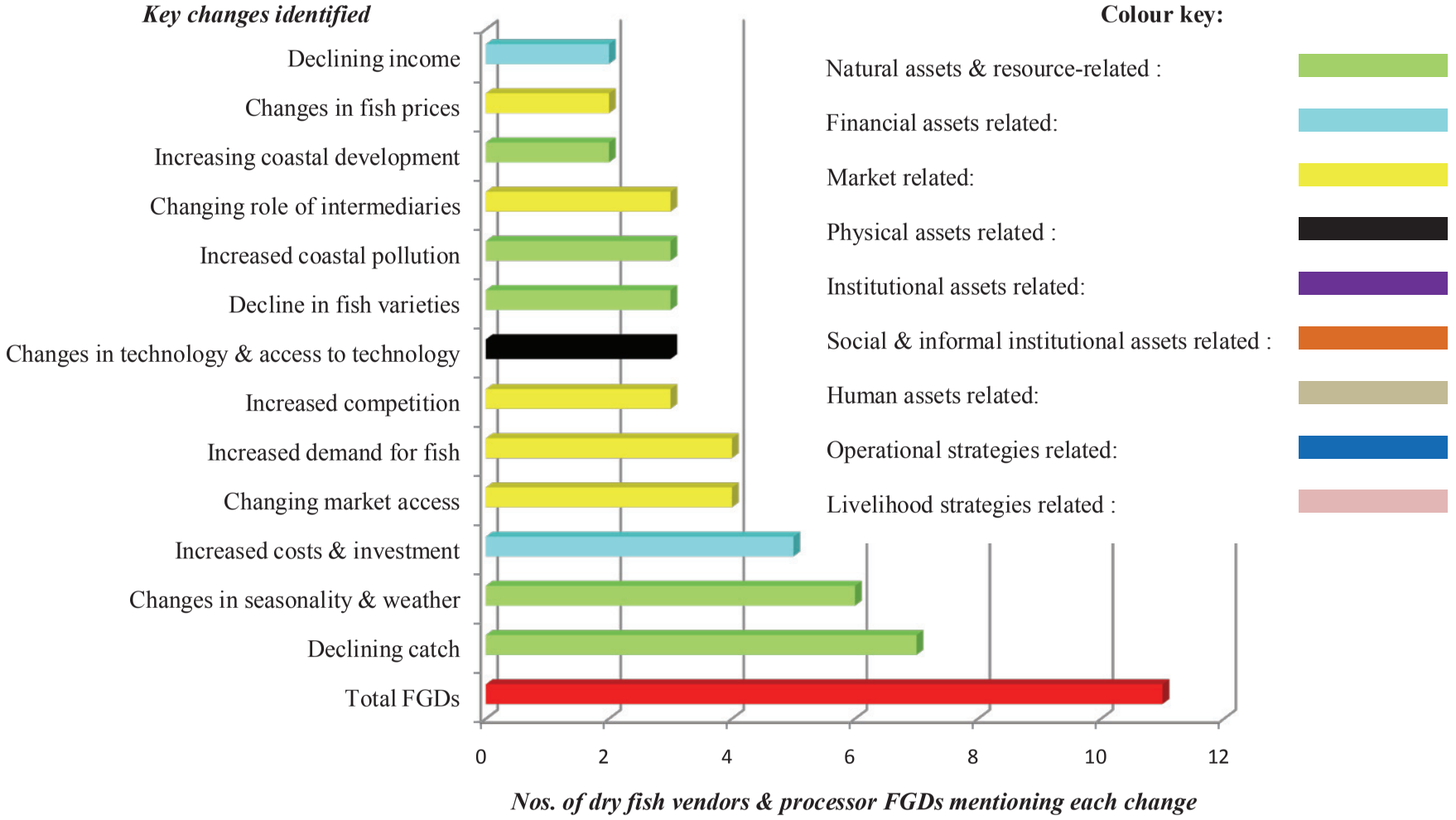


Figure 4.3.3.2 : Adaptive strategies identified during FGDs with dry fish vendors & processors

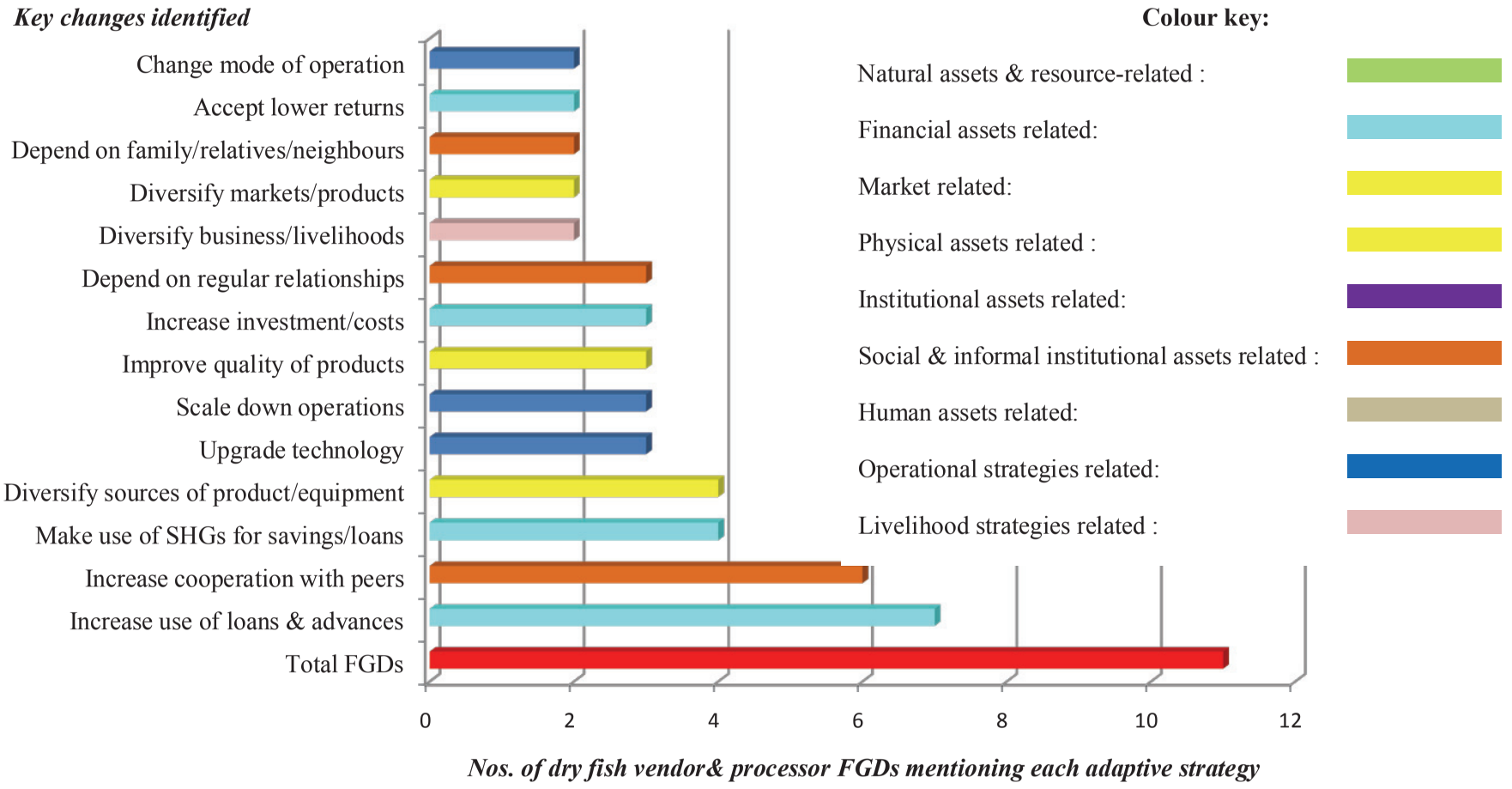


Figure 4.3.3.3 : Supporting factors identified during FGDs with dry fish vendors

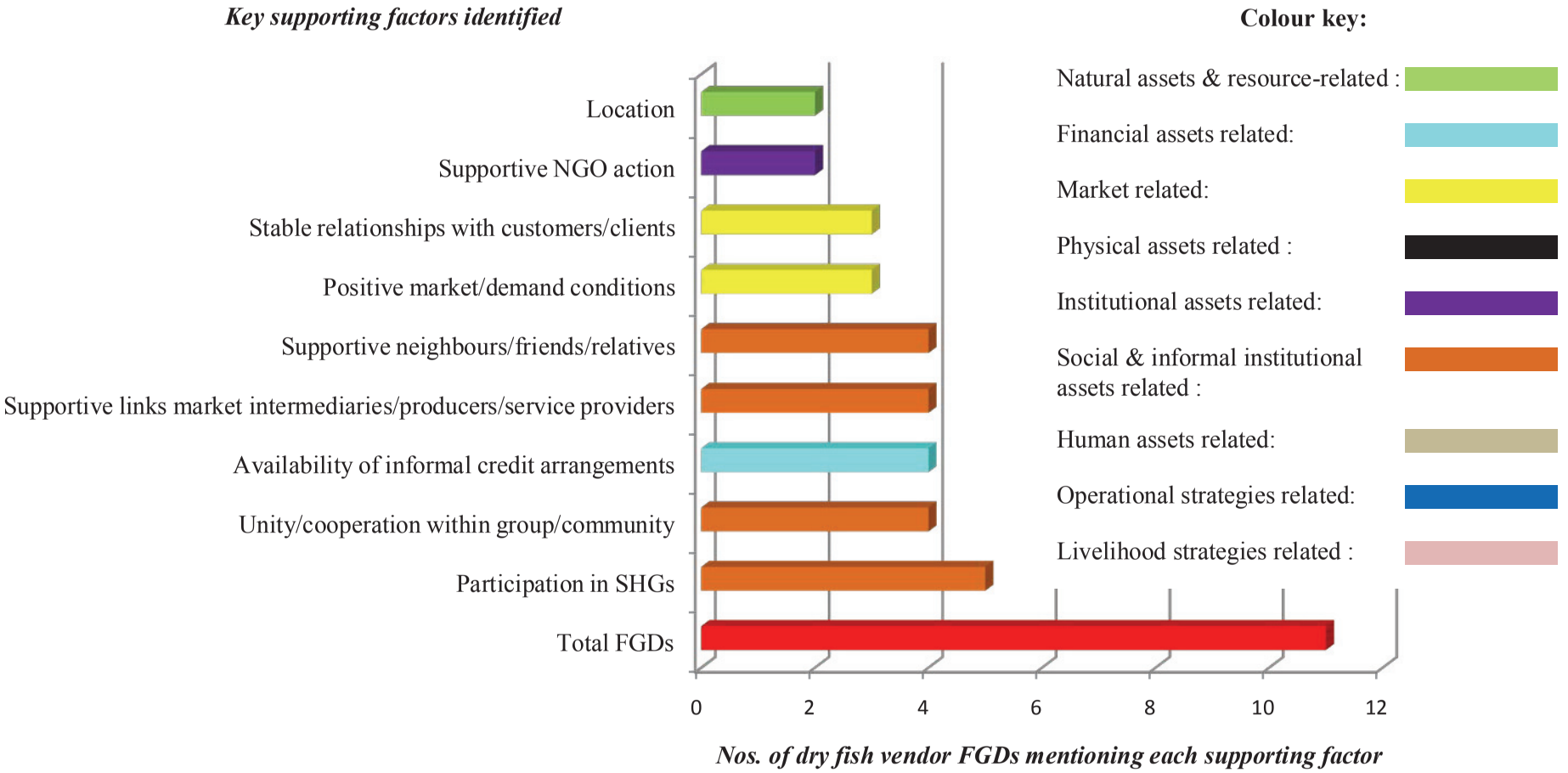
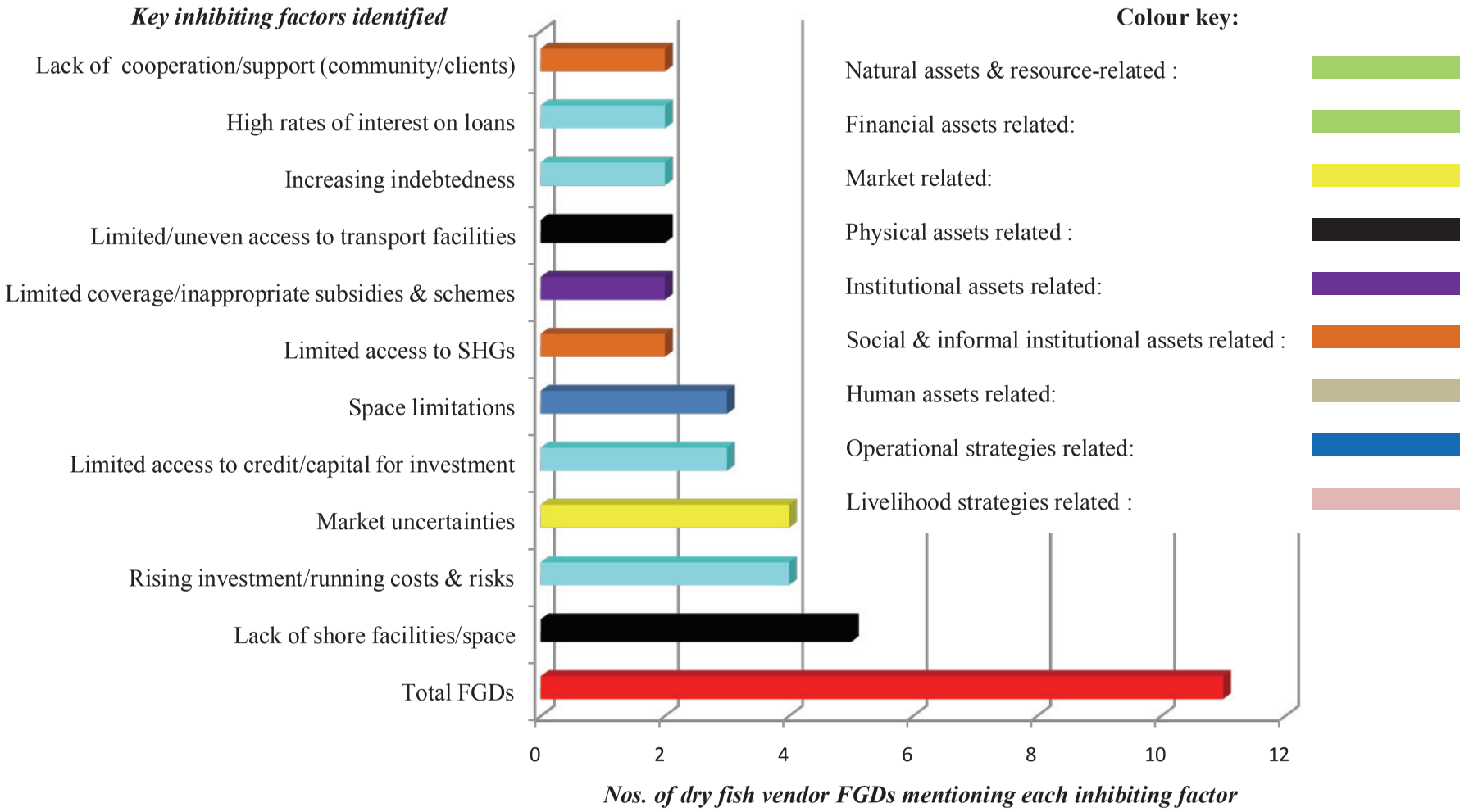


Figure 4.3.3.4 : Inhibiting factors identified during FGDs with dry fish vendors



Analysis of perceptions of change and responses to change among post-harvest operator stakeholder groups

Annex 4.3.4 Analysis among fish agent groups

Figure 4.3.4.1 : Key livelihood changes identified during FGDs with fish agents

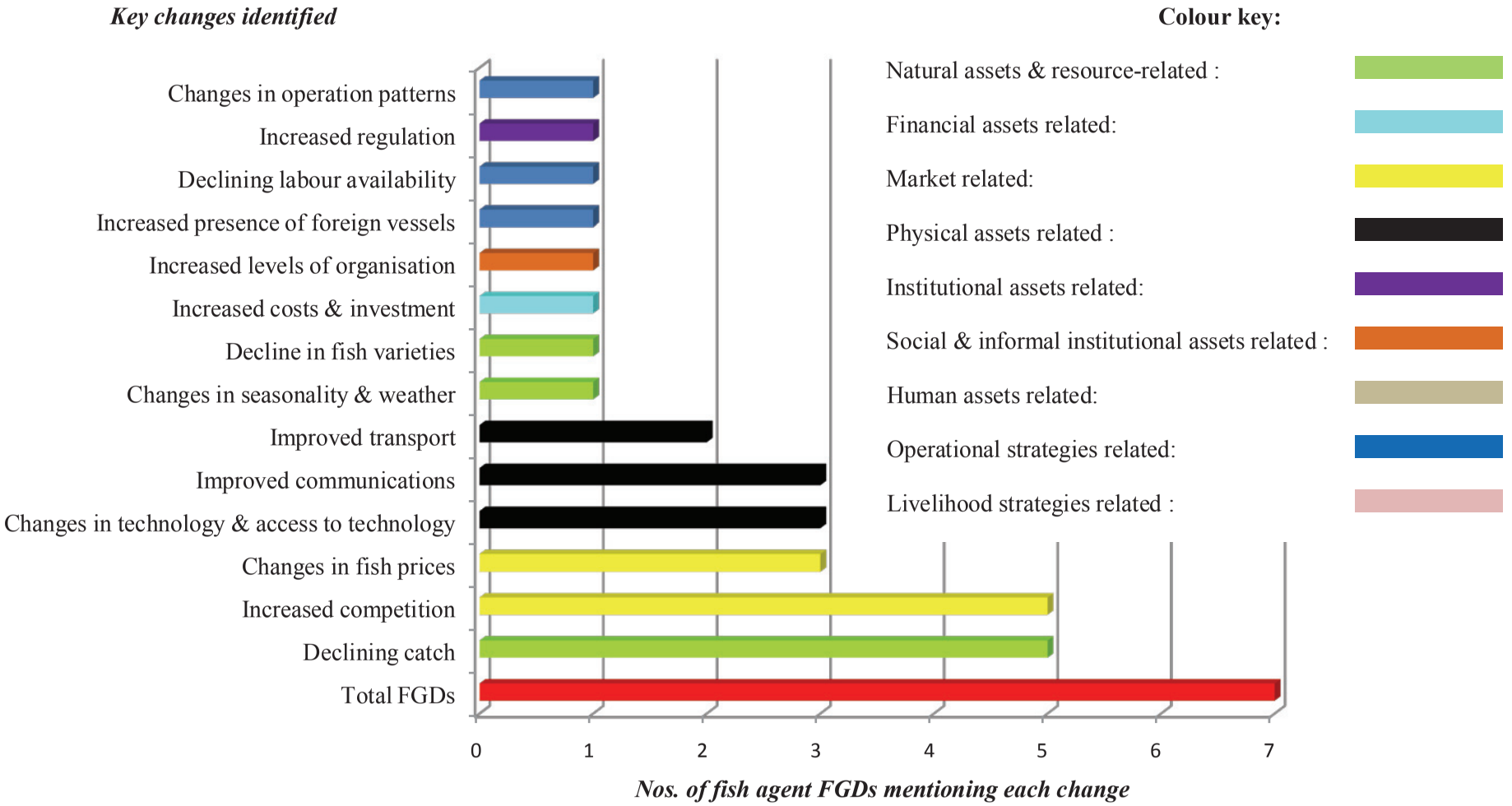


Figure 4.3.4.2 : Adaptive strategies identified during FGDs with fish agents

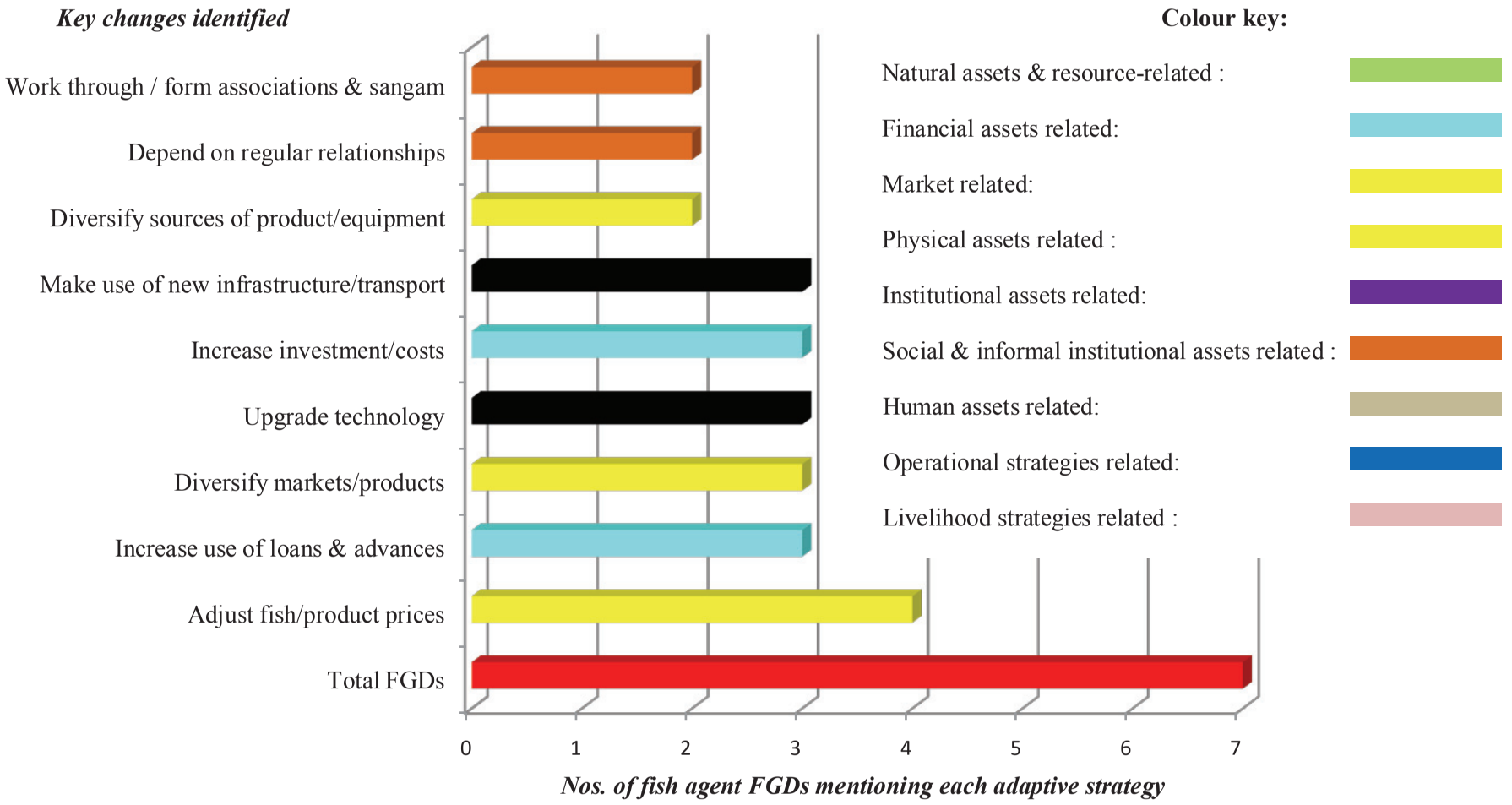


Figure 4.3.4.3 : Supporting factors identified during FGDs with fish agents

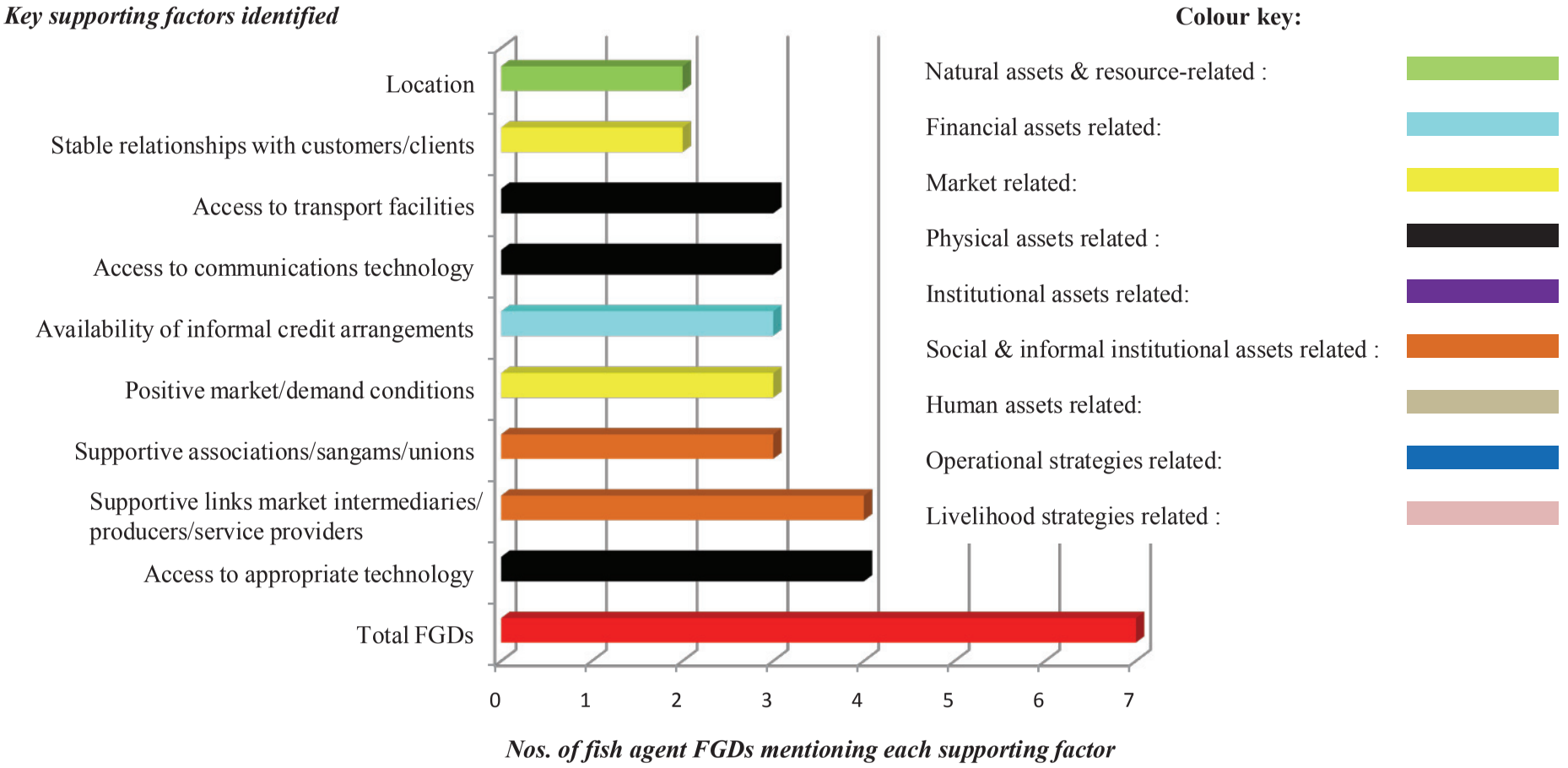
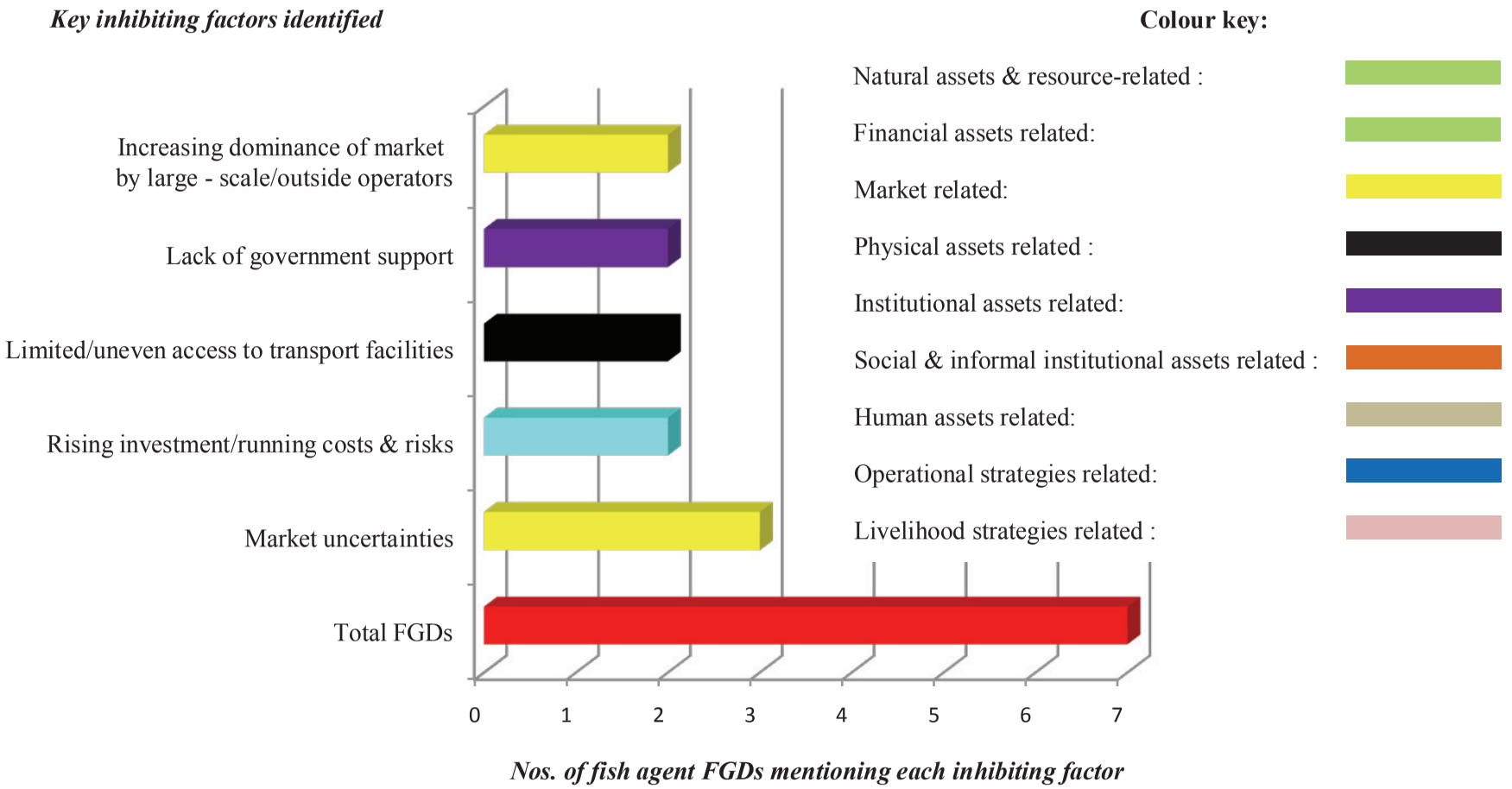


Figure 4.3.4.4 : Inhibiting factors identified during FGDs with fish agents



Annex 4.4 Analysis of perceptions of change and responses to change among service provider stakeholder groups

(Mechanics, fuel suppliers, ice manufacturers and suppliers, net menders)

Figure 4.4.1 : Key livelihood changes identified during FGDs with service provider groups

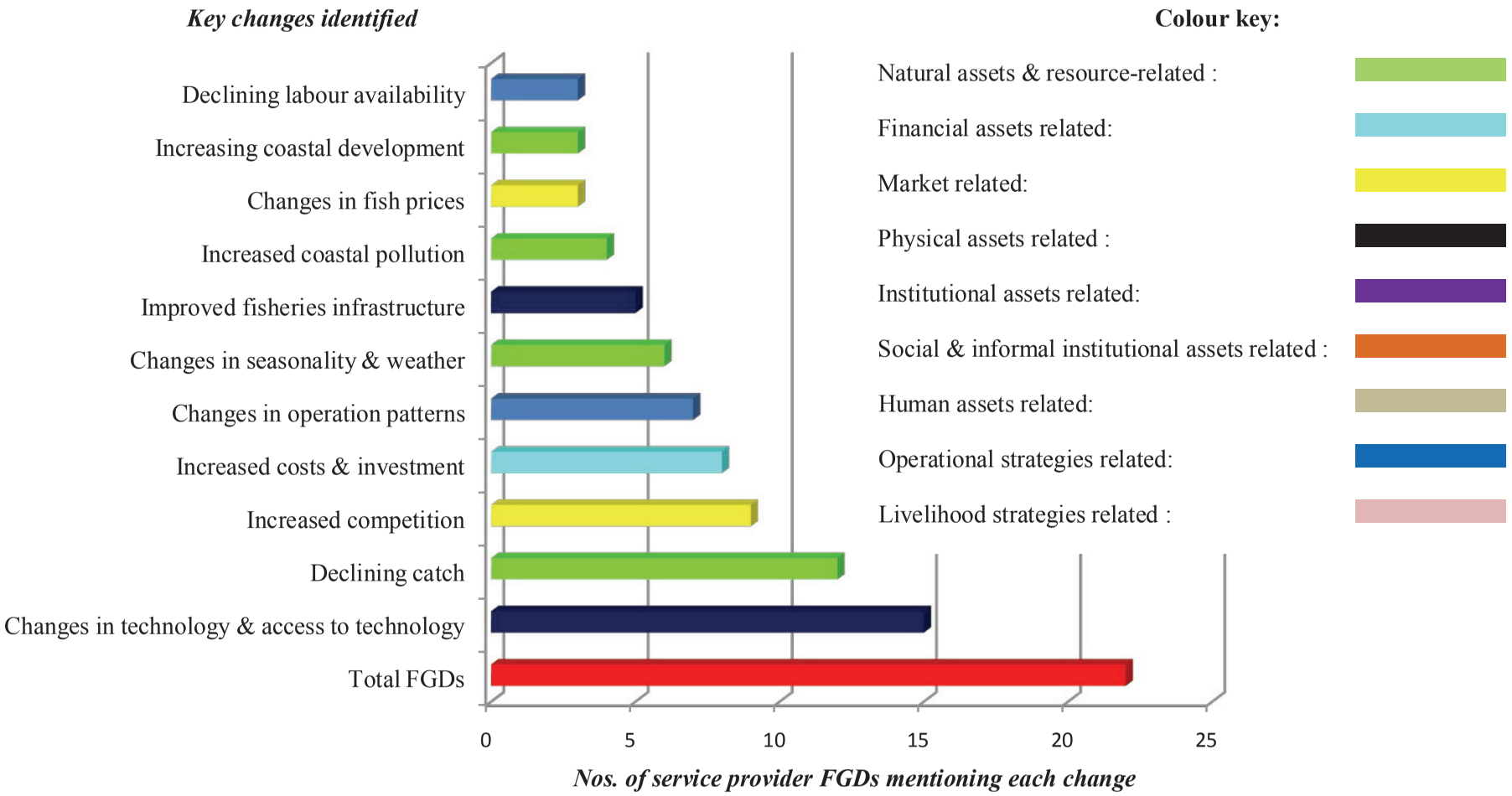


Figure 4.4.2 : Adaptive strategies identified during FGDs with service provider groups

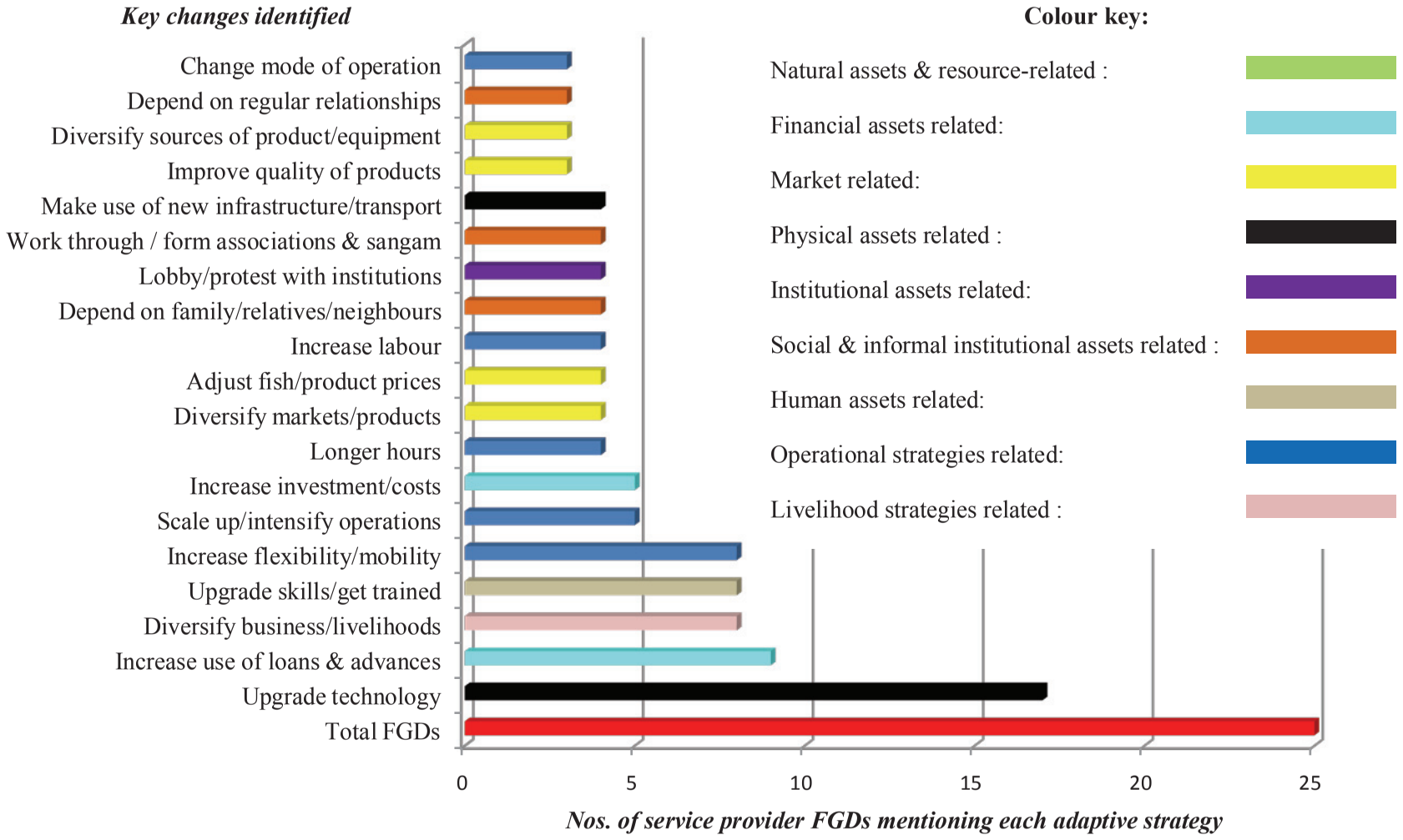


Figure 4.4.3 : Supporting factors identified during FGDs with service provider groups

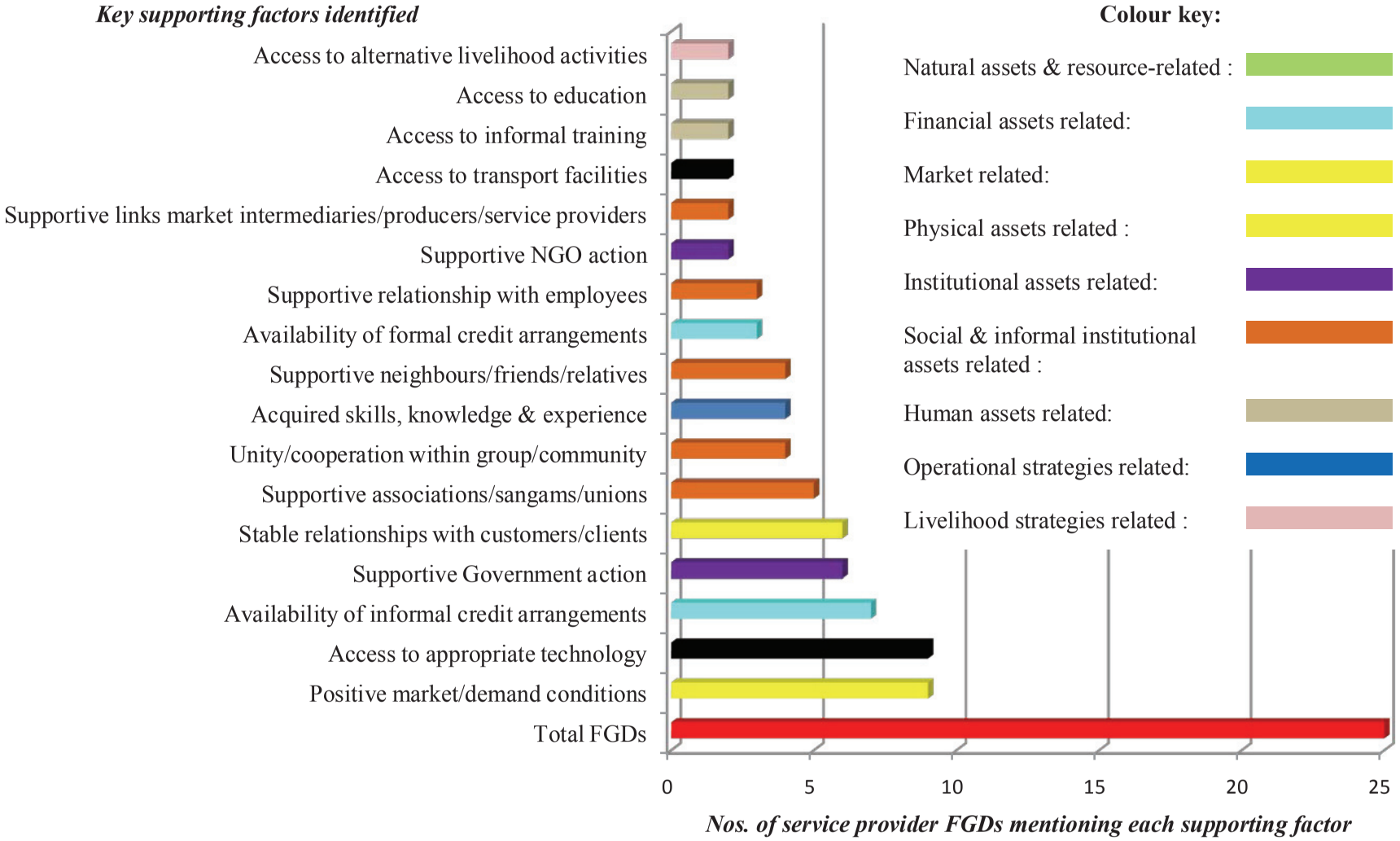
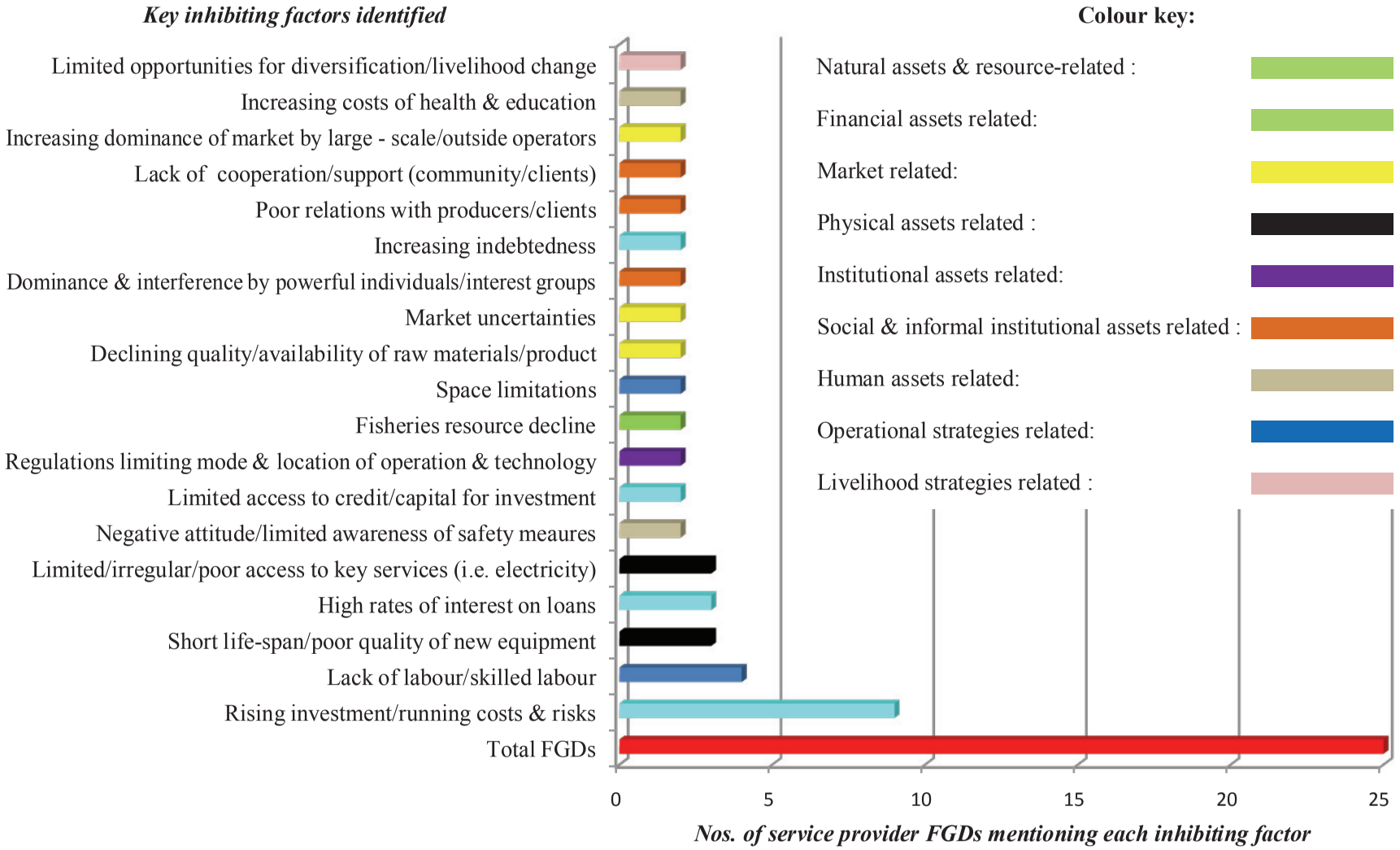


Figure 4.4.4 : Inhibiting factors identified during FGDs with service provider groups



Annex 4.5 Analysis of perceptions of change and responses to change among all female stakeholder groups

Figure 4.5.1 : Key livelihood changes identified during FGDs with all-female groups

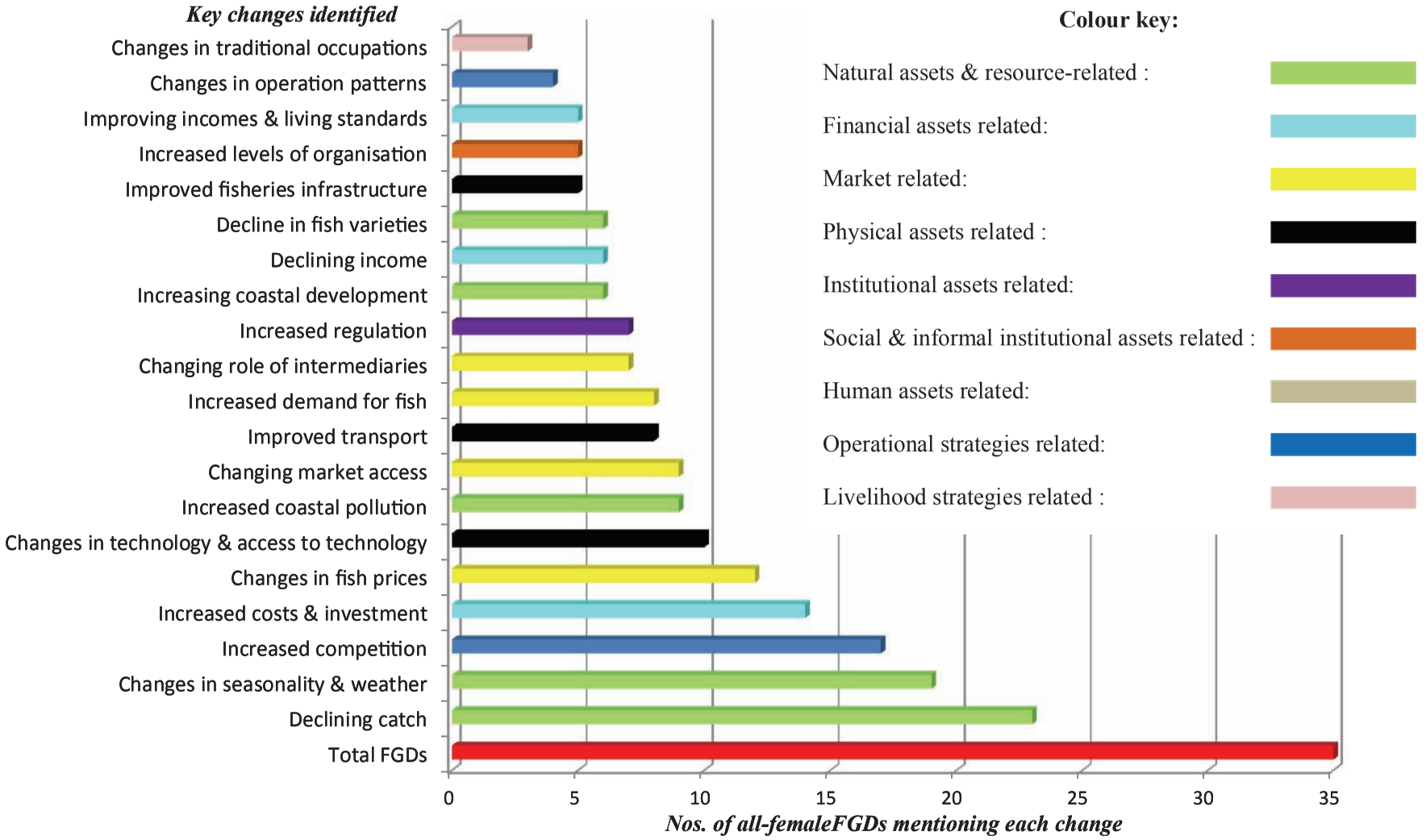


Figure 4.5.2 : Adaptive strategies identified during FGDs with all-female groups

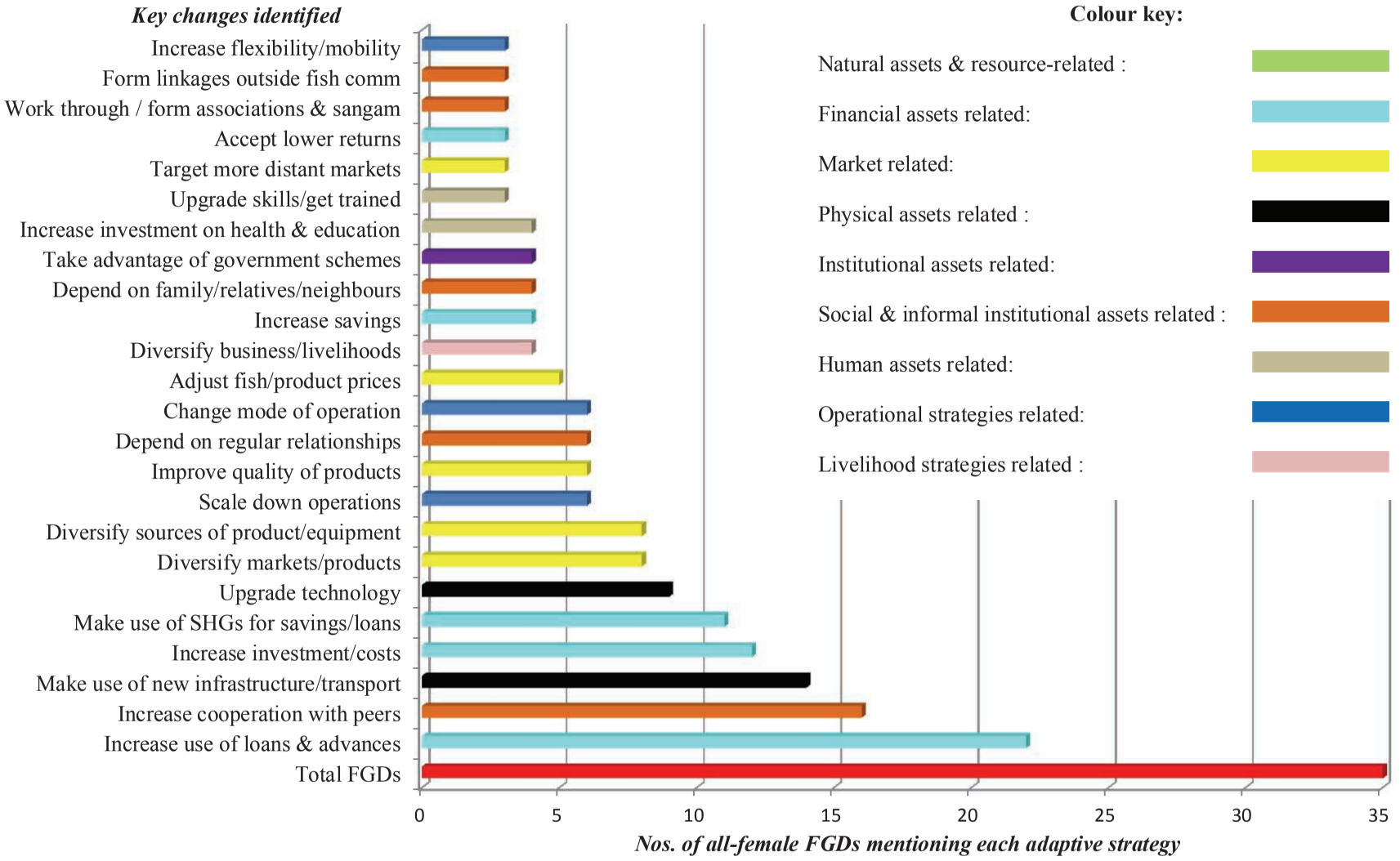
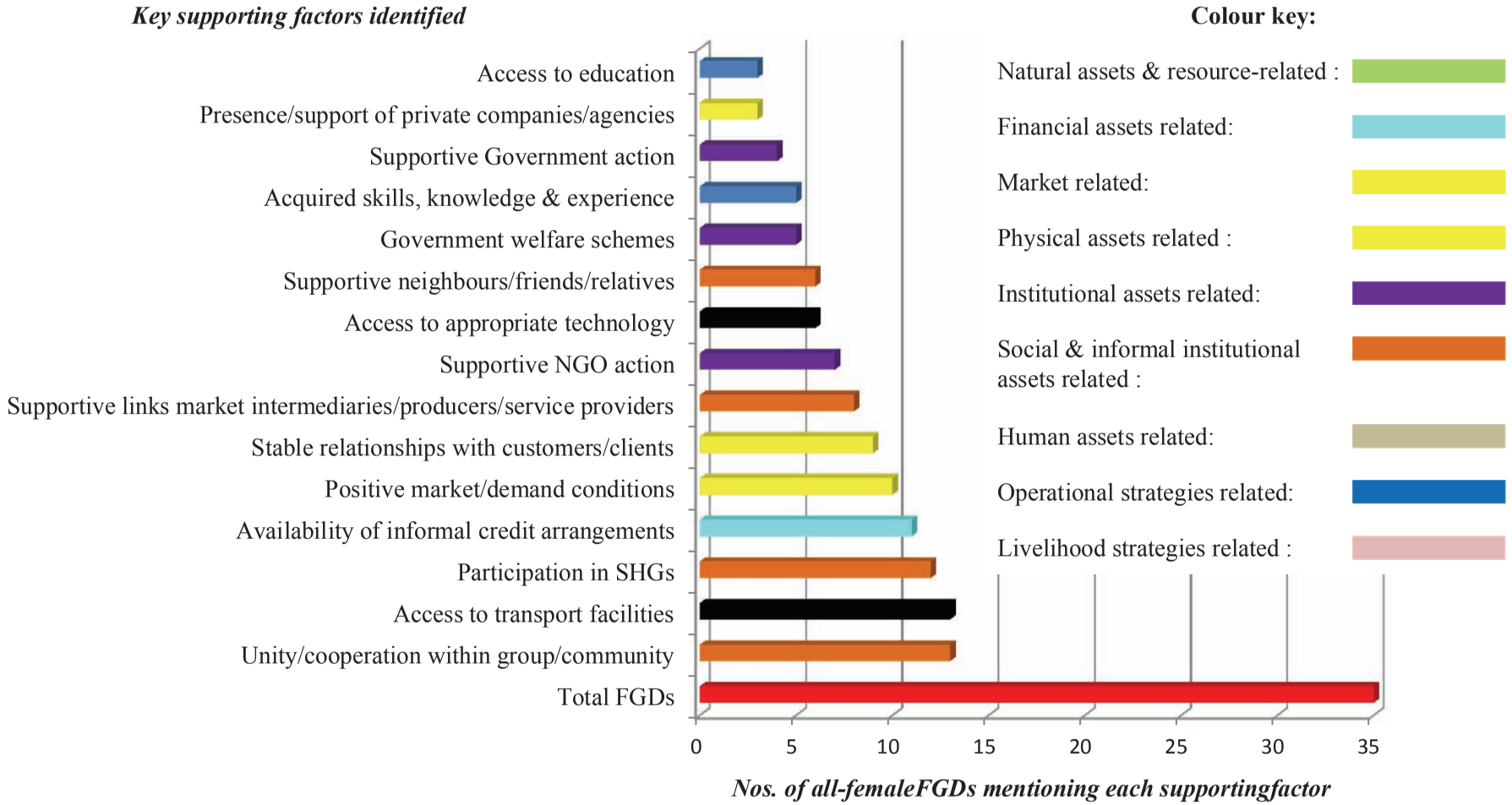


Figure 4.5.3 : Supporting factors identified during FGDs with all-female groups



FIMSUL Stakeholder and Livelihoods Analysis Process

Analysis of Focus Group Discussion Data (FGDs)

Annex 5

Area-Based Analysis of Perceptions of Change and Responses to Change among Fisheries Stakeholders

Annex 5.1 Tiruvallur and Chennai Districts, Tamil Nadu

155

Figure 5.1.1 : Key livelihood changes identified during FGDs in Tiruvallur &Chennai Districts

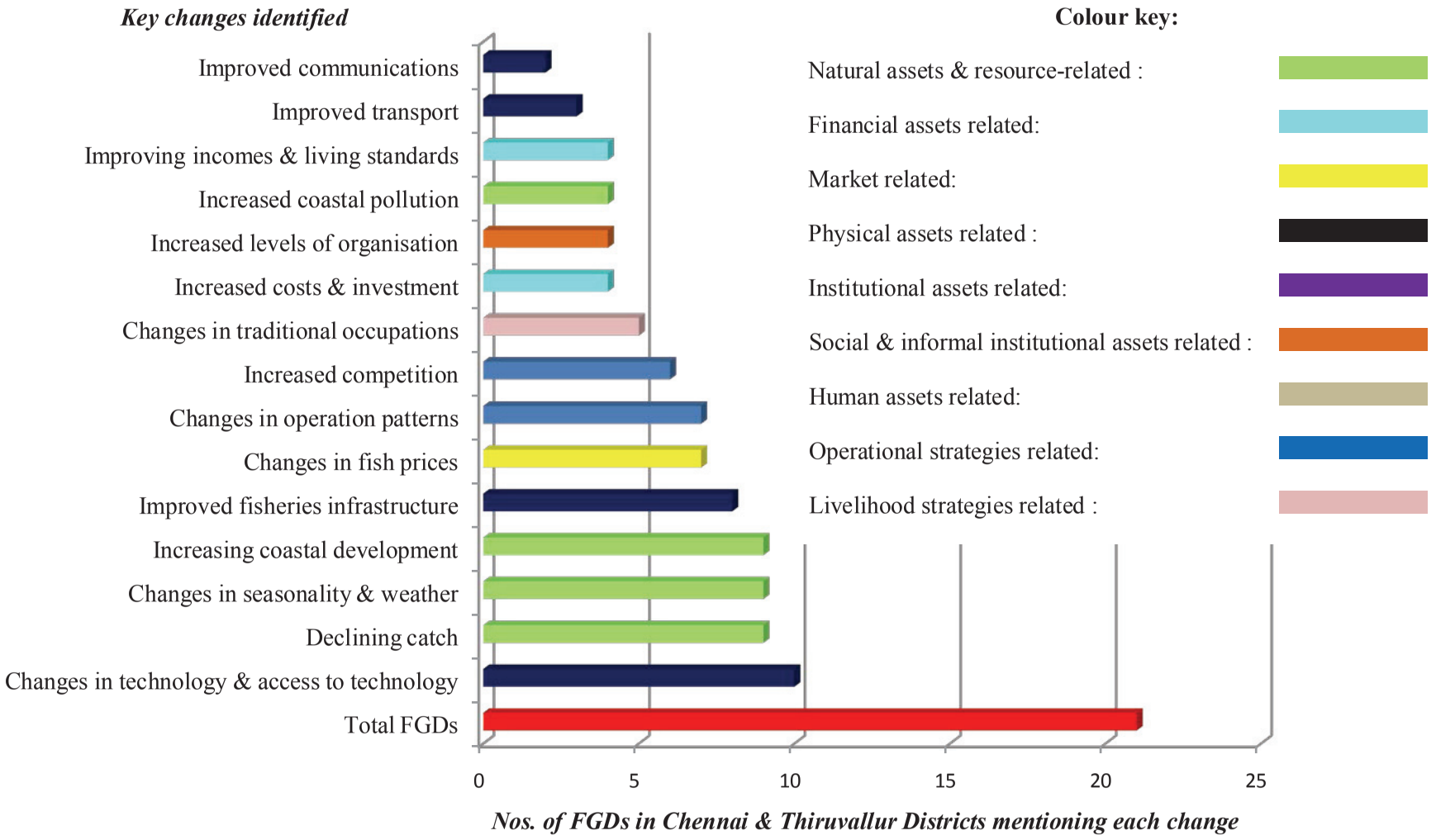


Figure 5.1.2 : Adaptive strategies identified during FGDs in Tiruvallur & Chennai Districts

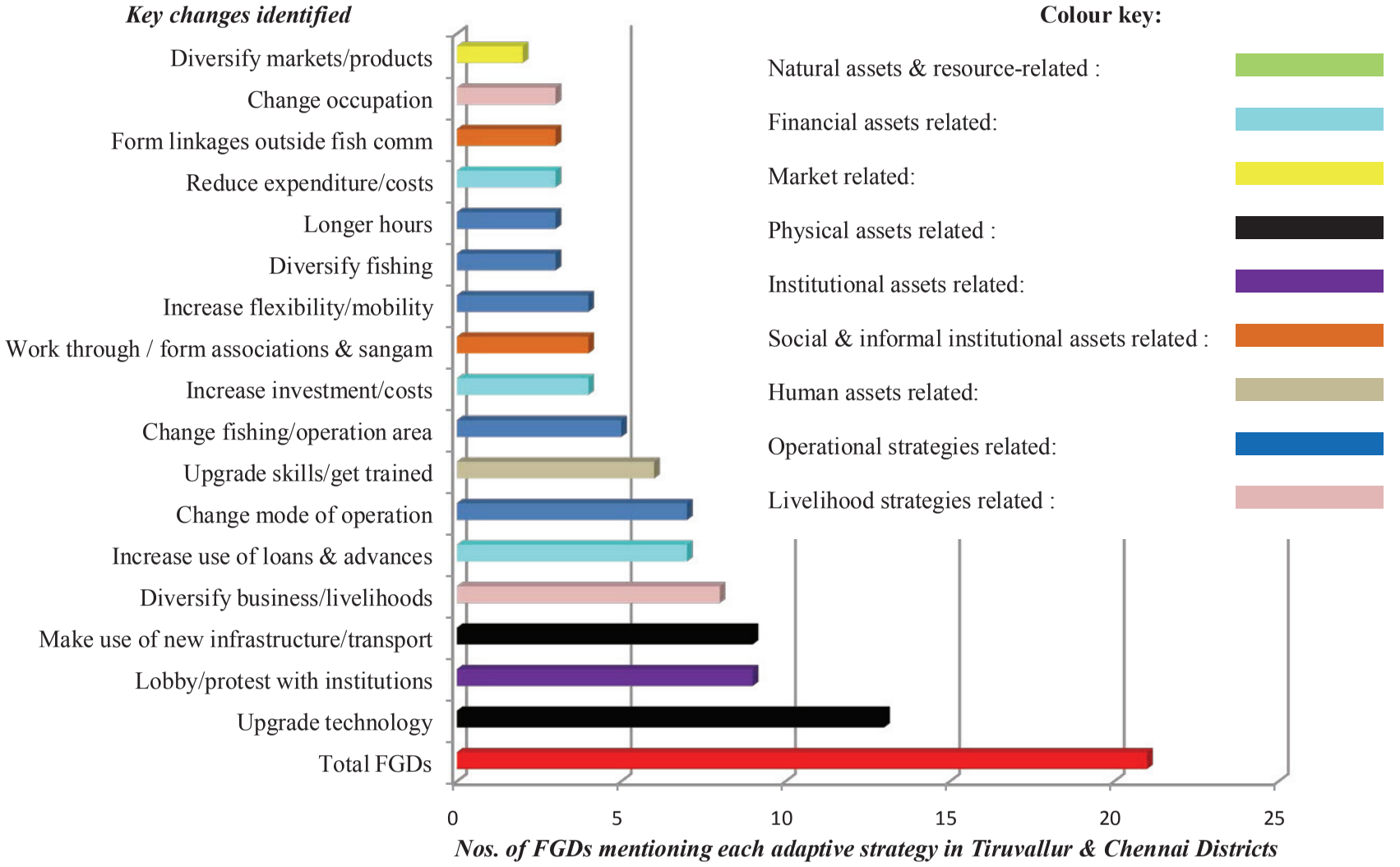


Figure 5.1.3 : Supporting factors identified during FGDs in Tiruvallur & Chennai Districts

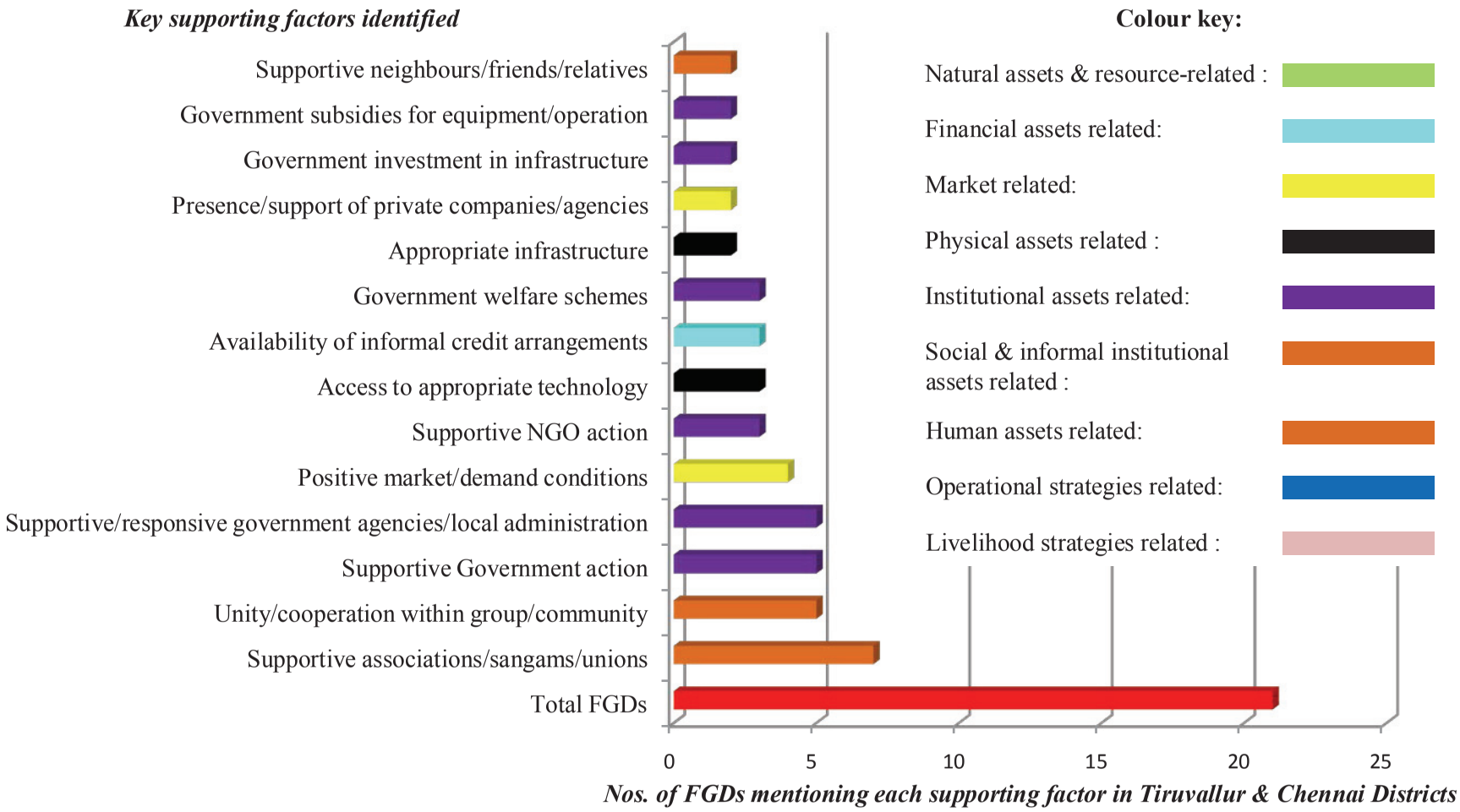
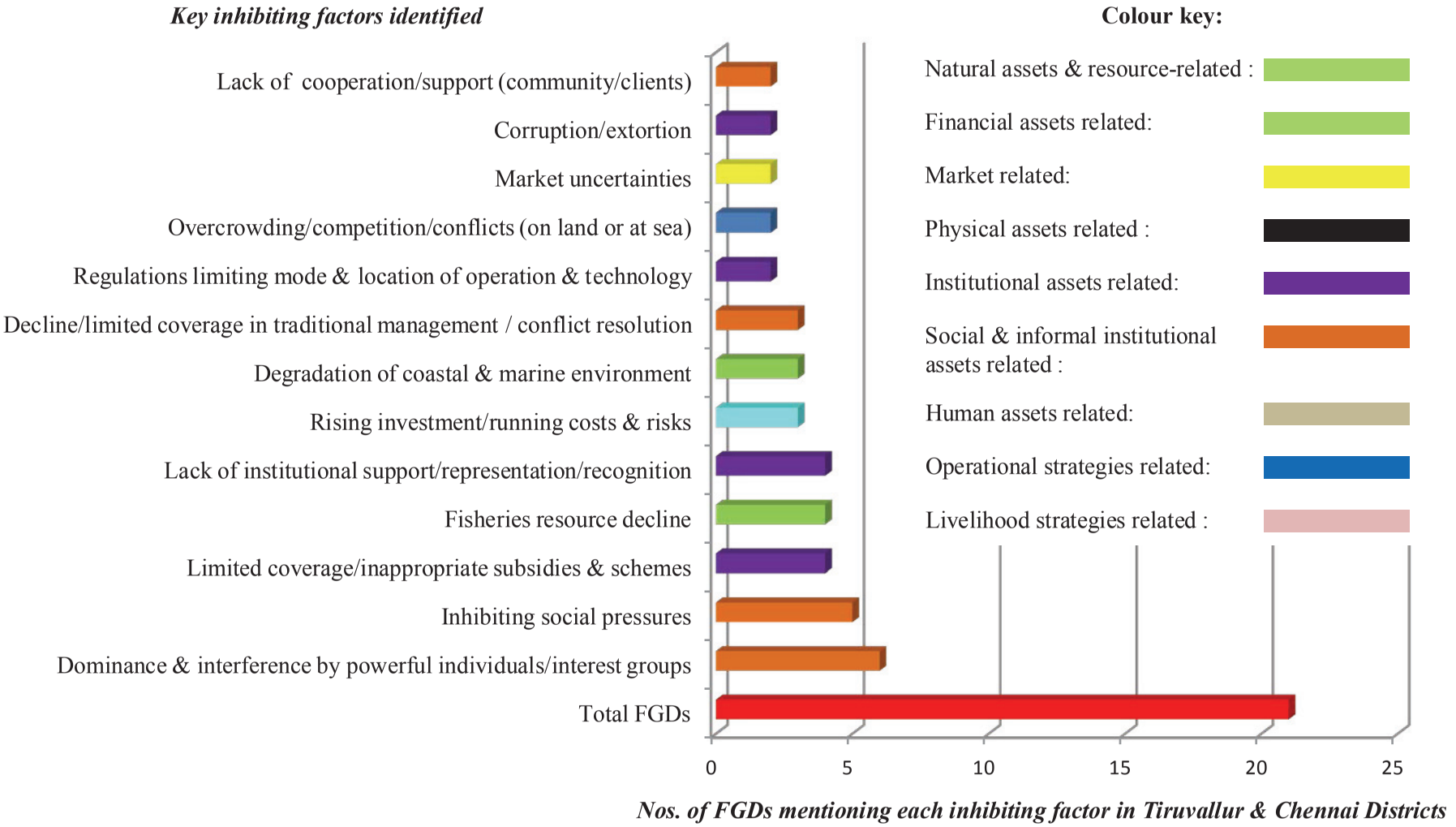


Figure 5.1.4 : Inhibiting factors identified during FGDs in Tiruvallur & Chennai Districts



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.2 Kancheepuram and Viluppuram Districts, Tamil Nadu

Figure 5.2.1: Key livelihood changes identified during FGDs in Kancheepuram & Viluppuram Districts

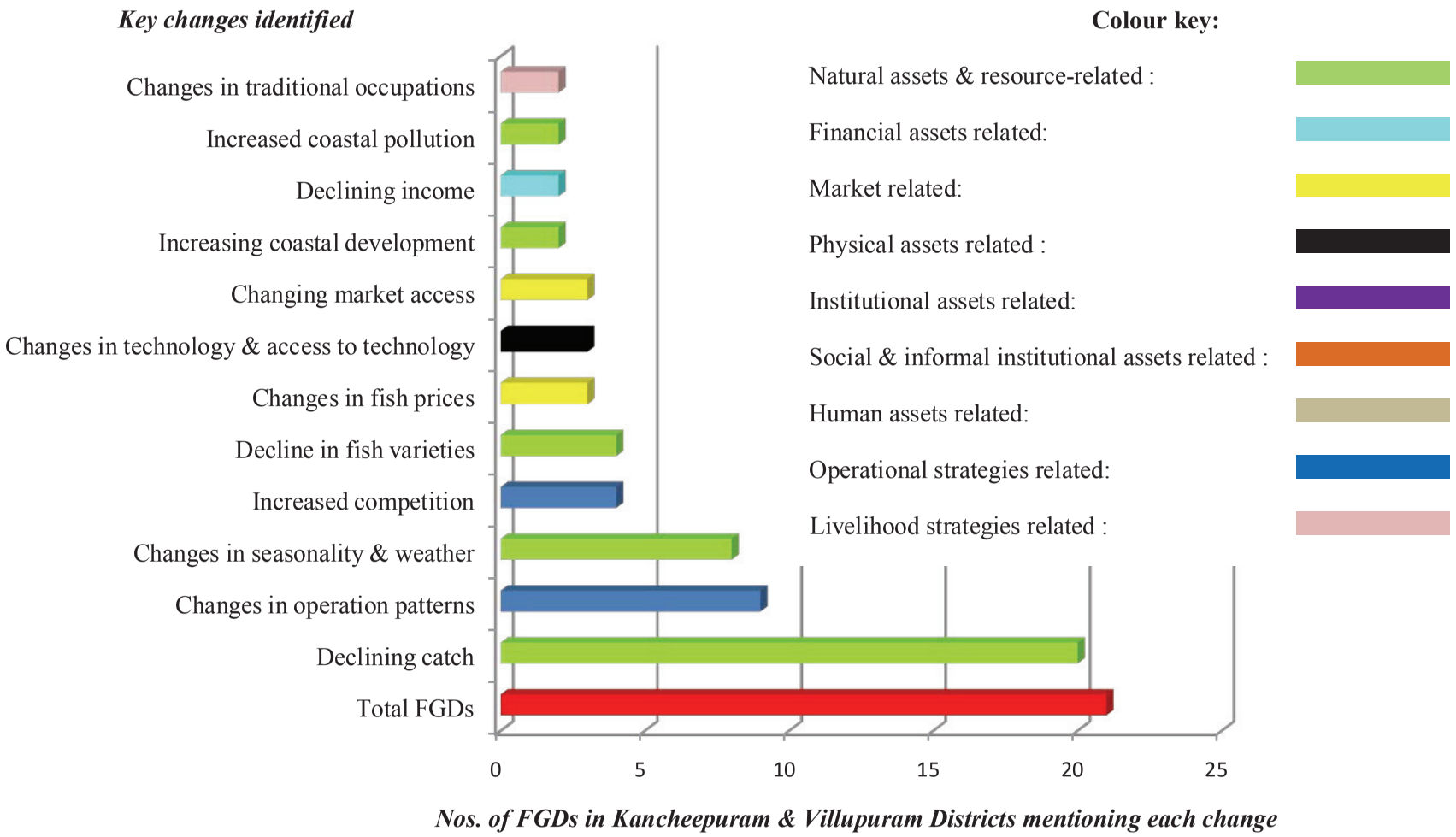


Figure 5.2.2 : Adaptive strategies identified during FGDs in Kancheepuram & Viluppuram Districts

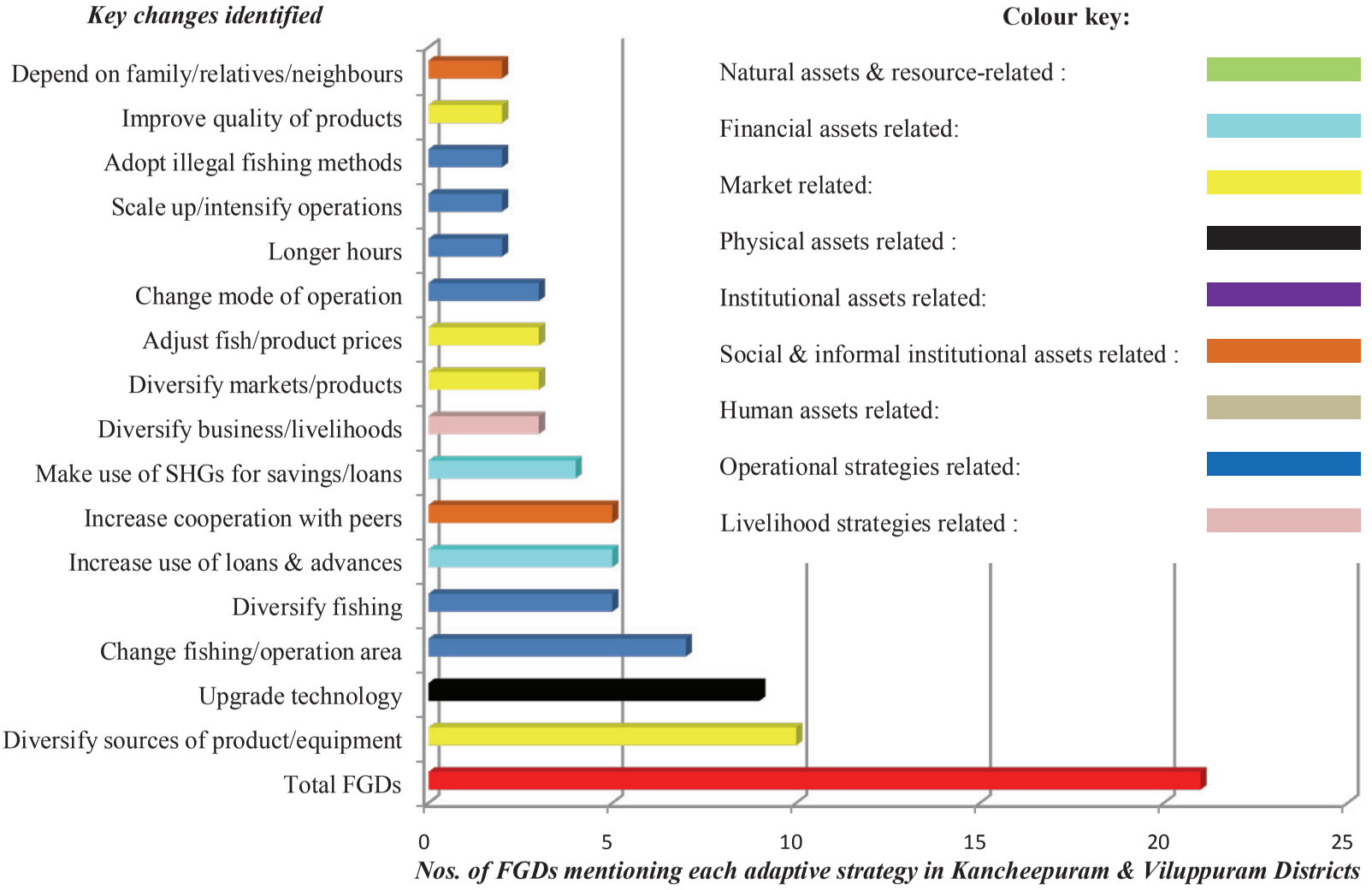


Figure 5.2.3 : Supporting factors identified during FGDs in Kancheepuram & Viluppuram Districts

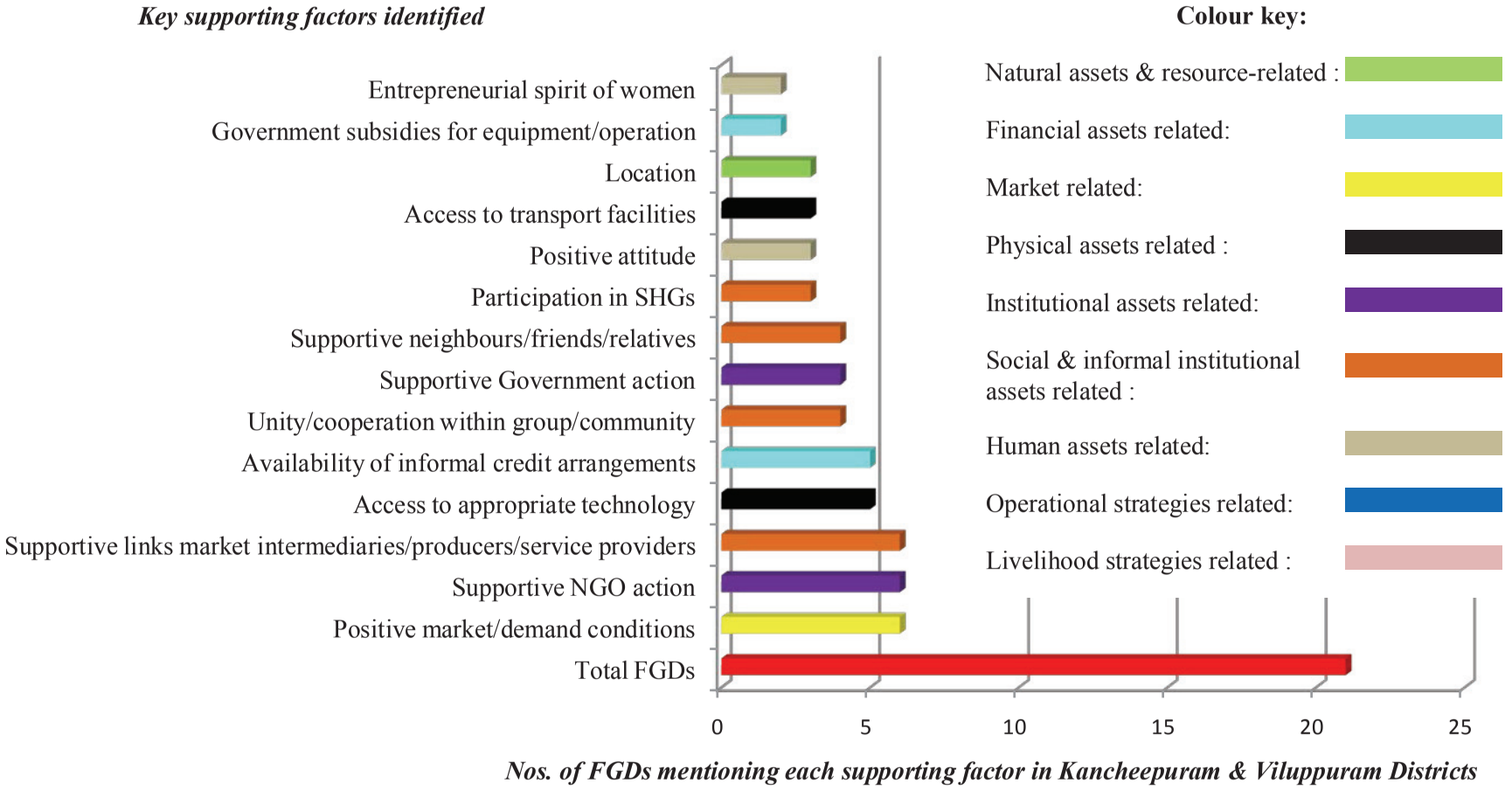
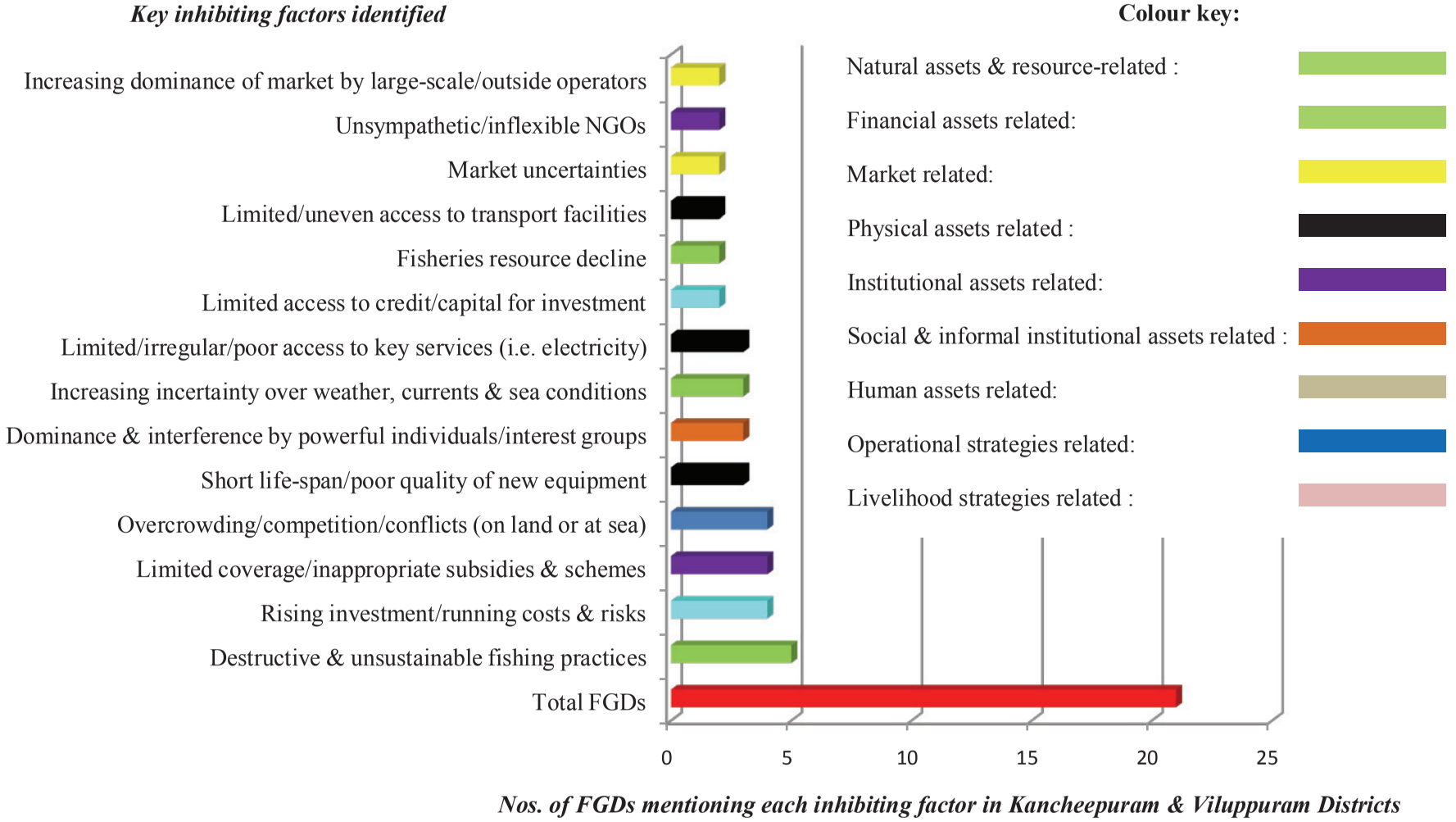


Figure 5.2.4 : Inhibiting factors identified during FGDs in Kancheepuram & Viluppuram Districts



Area-based analysis of perceptions of change and responses to change among fisheries stakeholder groups

Annex 5.3 Puducherry and Karaikal Districts, Union Territory of Puducherry

Figure 5.3.1 : Key livelihood changes identified during FGDs in Puducherry & Karaikal

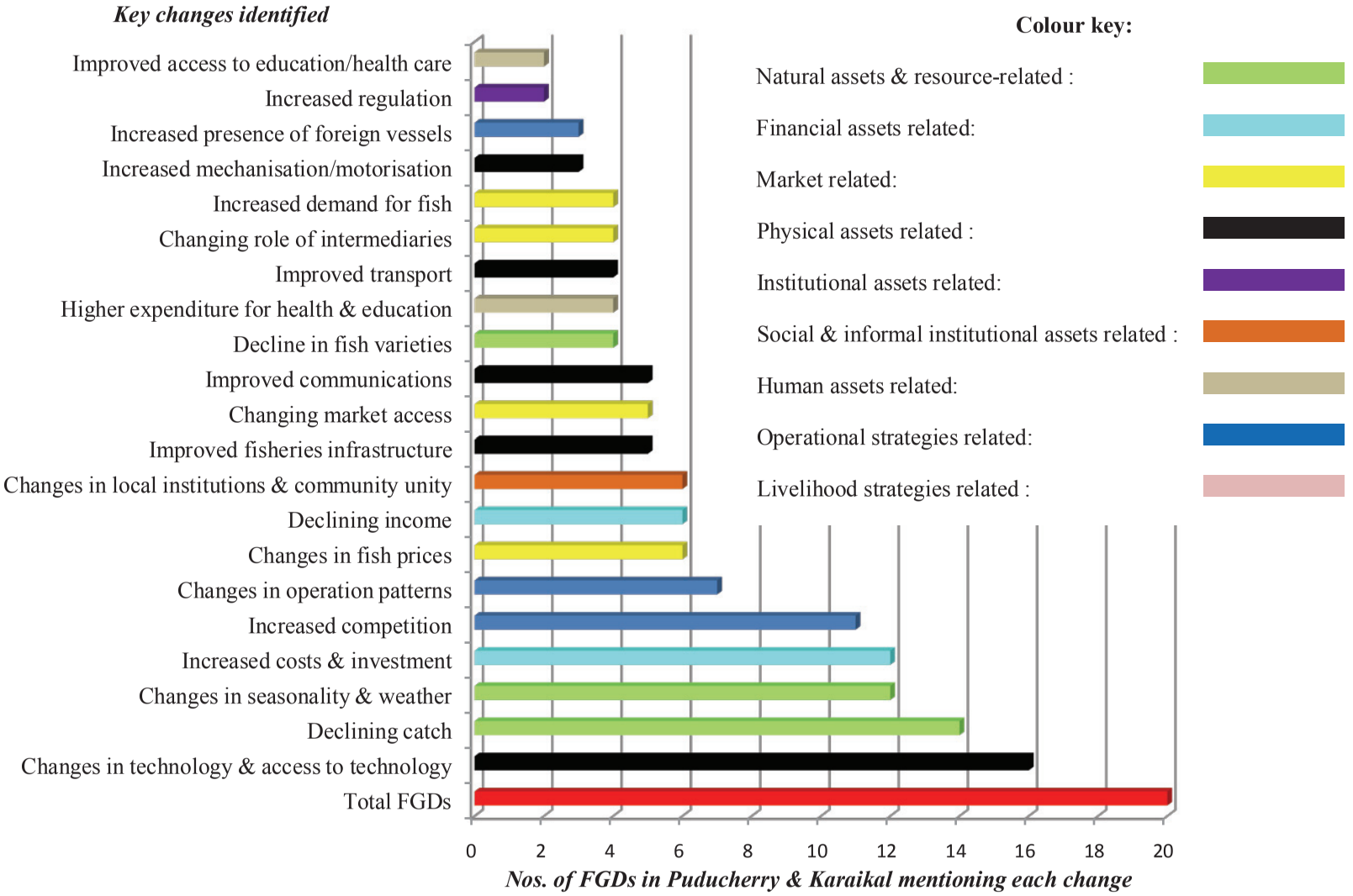


Figure 5.3.2 : Adaptive strategies identified during FGDs in Puducherry & Karaikal

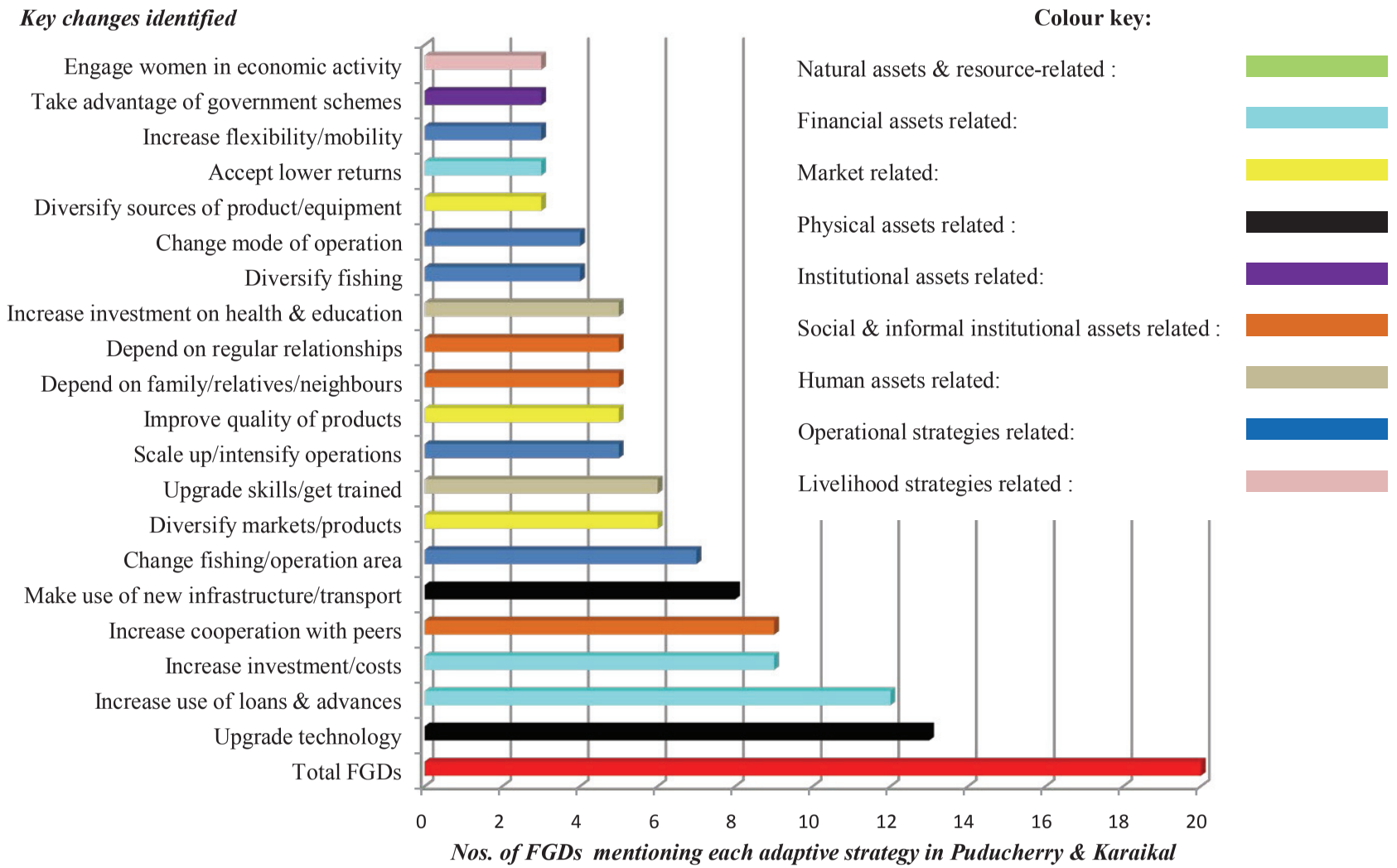


Figure 5.3.3 : Supporting factors identified during FGDs in Puducherry & Karaikal

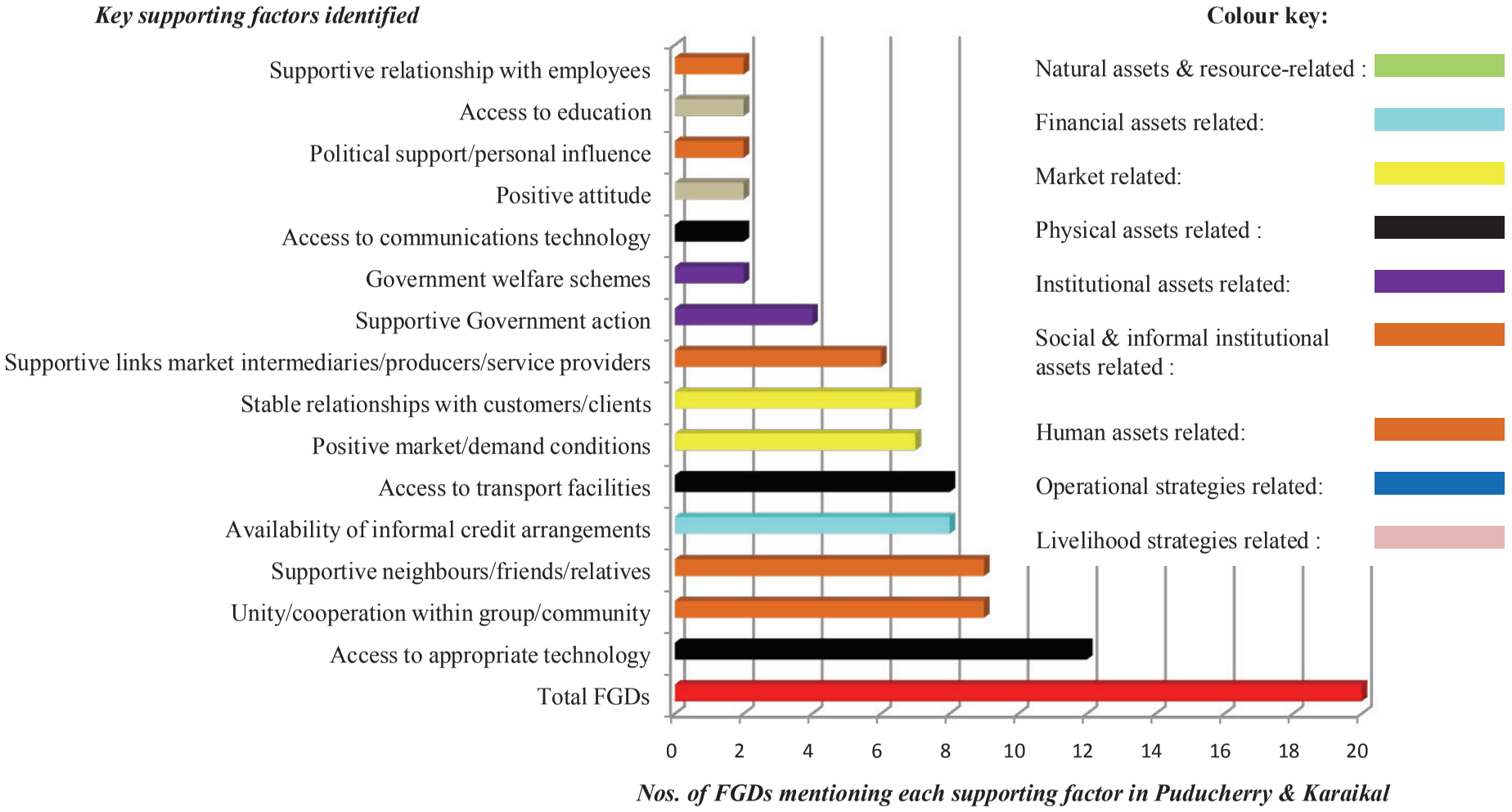
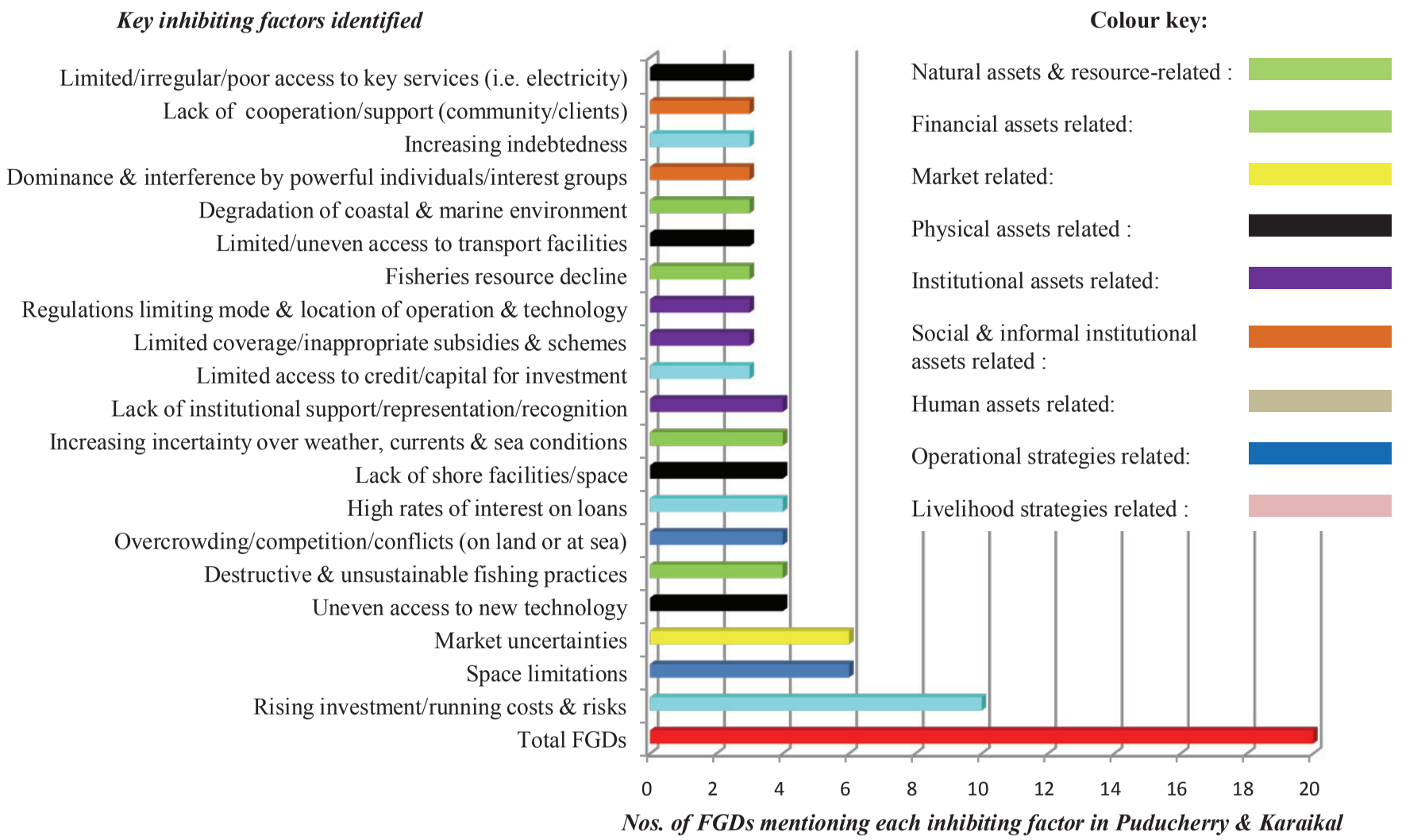


Figure 5.3.4 : Inhibiting factors identified during FGDs in Puducherry & Karaikal



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.4 Cuddalore and Nagapattinam Districts, Tamil Nadu

Figure 5.4.1 : Key livelihood changes identified during FGDs in Cuddalore & Nagapattinam Districts

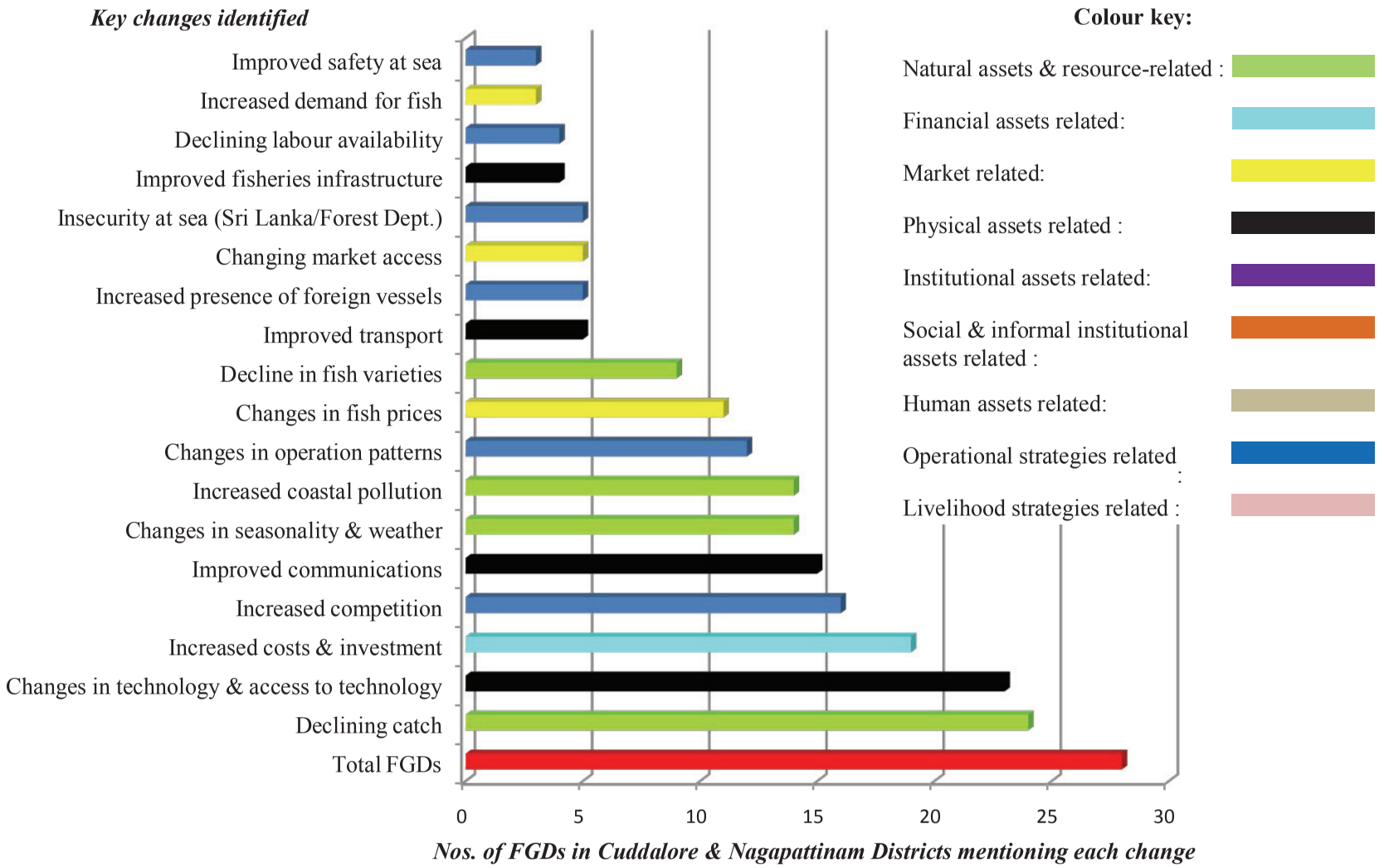


Figure 5.4.2 : Adaptive strategies identified during FGDs in Cuddalore & Nagapattinam Districts

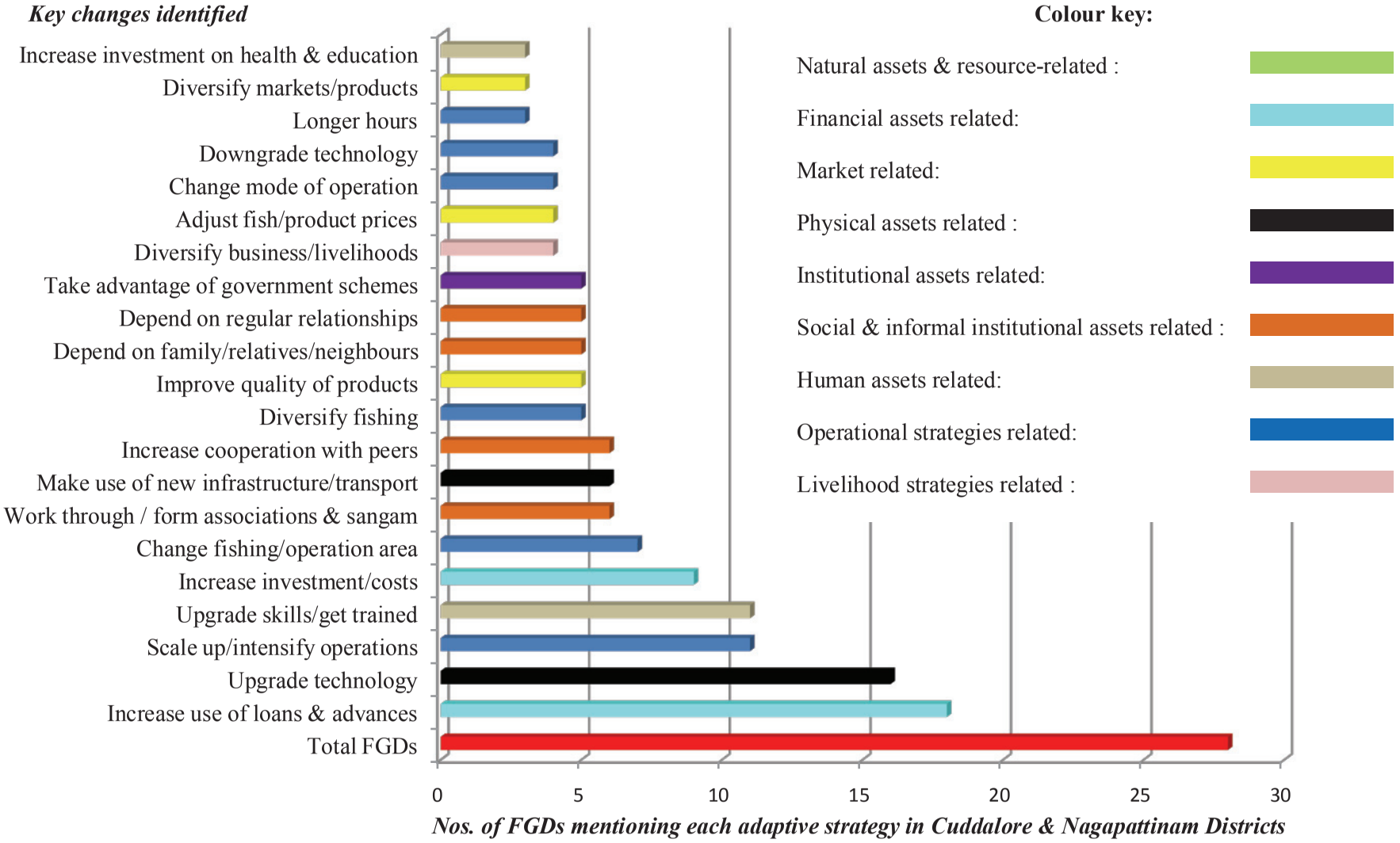


Figure 5.4.3 : Supporting factors identified during FGDs in Cuddalore & Nagapattinam Districts

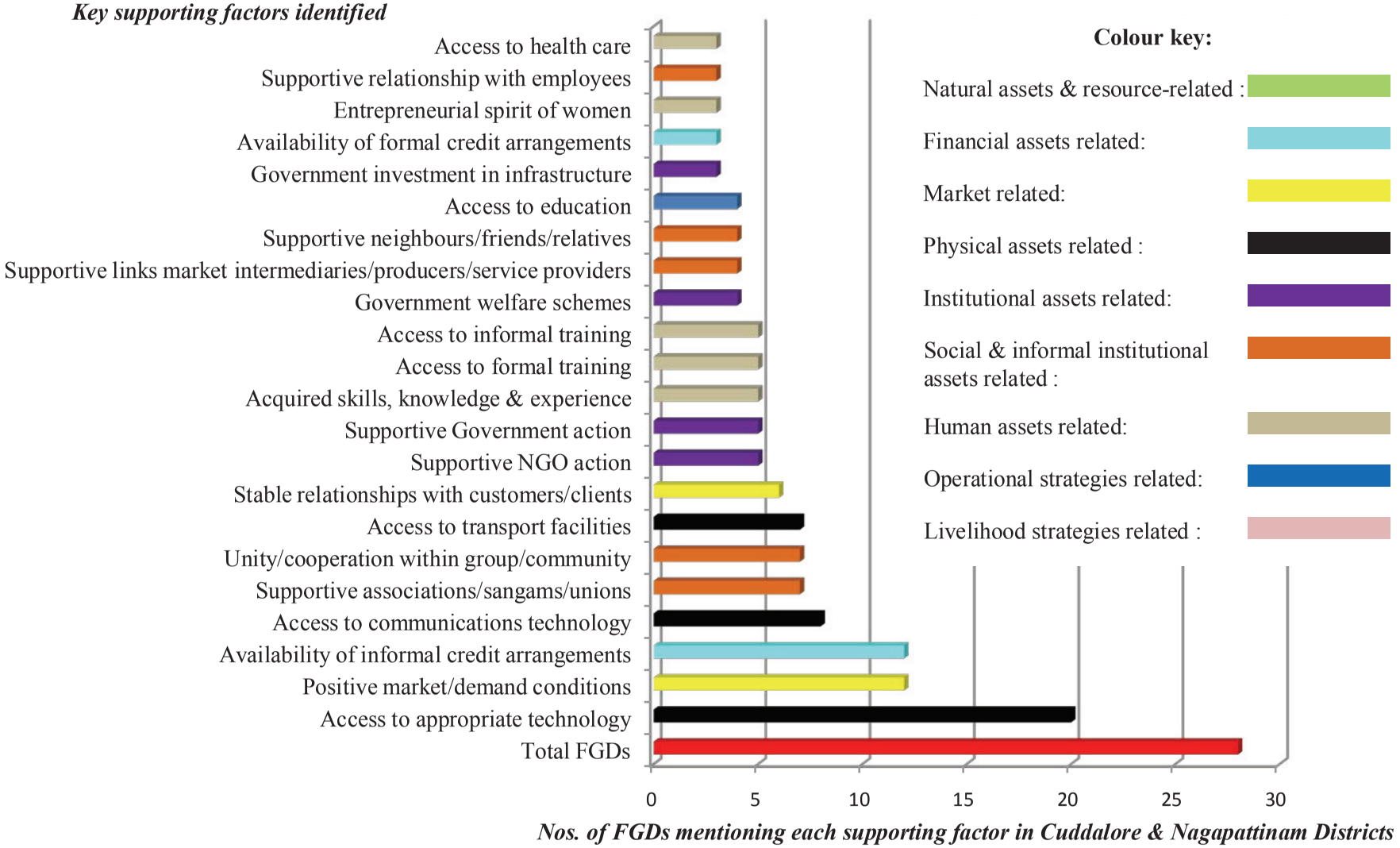
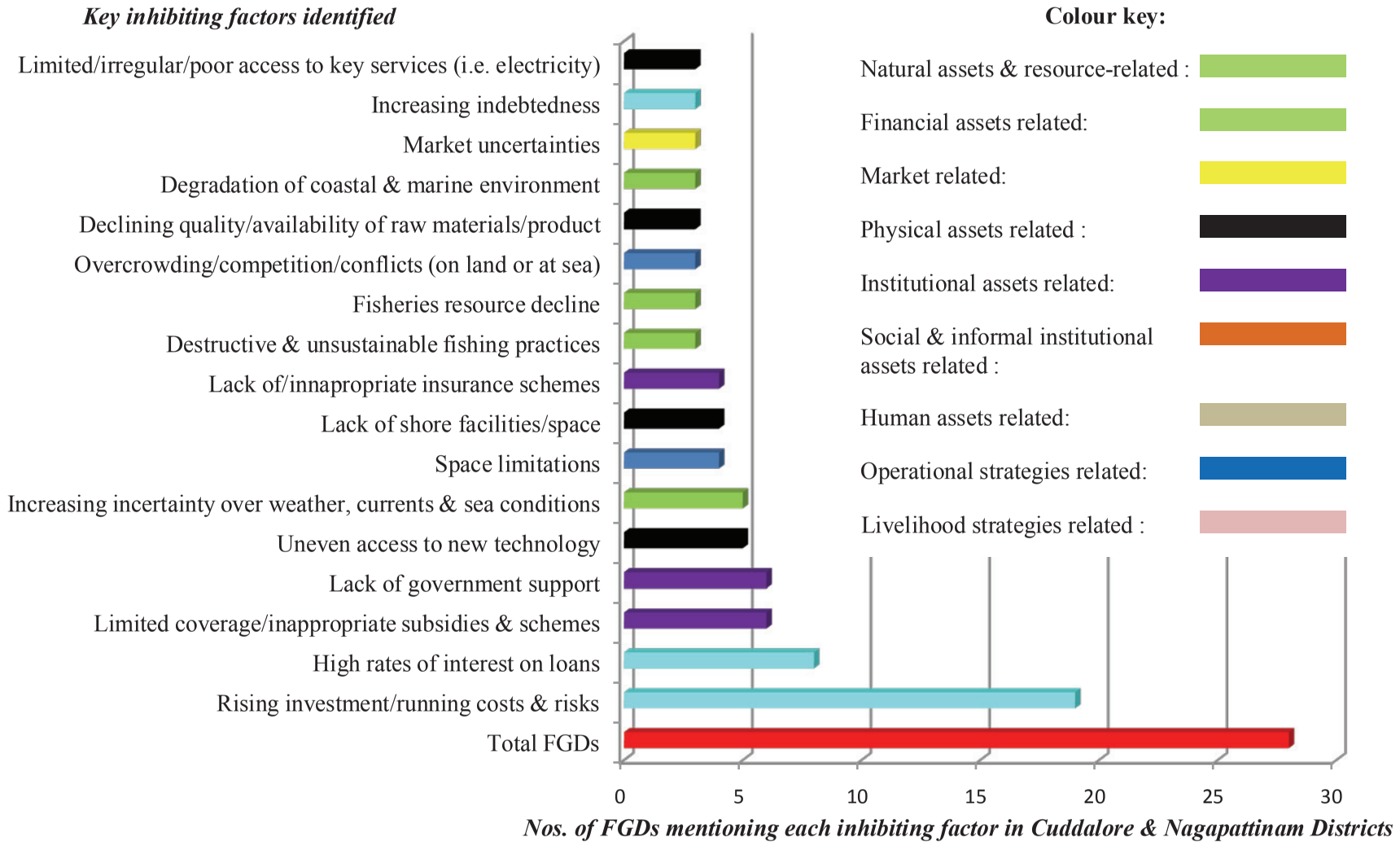


Figure 5.4.4 : Inhibiting factors identified during FGDs in Cuddalore & Nagapattinam Districts



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.5 Thanjavur and Tiruvarur Districts, Tamil Nadu

Figure 5.5.1 : Key livelihood changes identified during FGDs in Thanjavur & Tiruvarur Districts

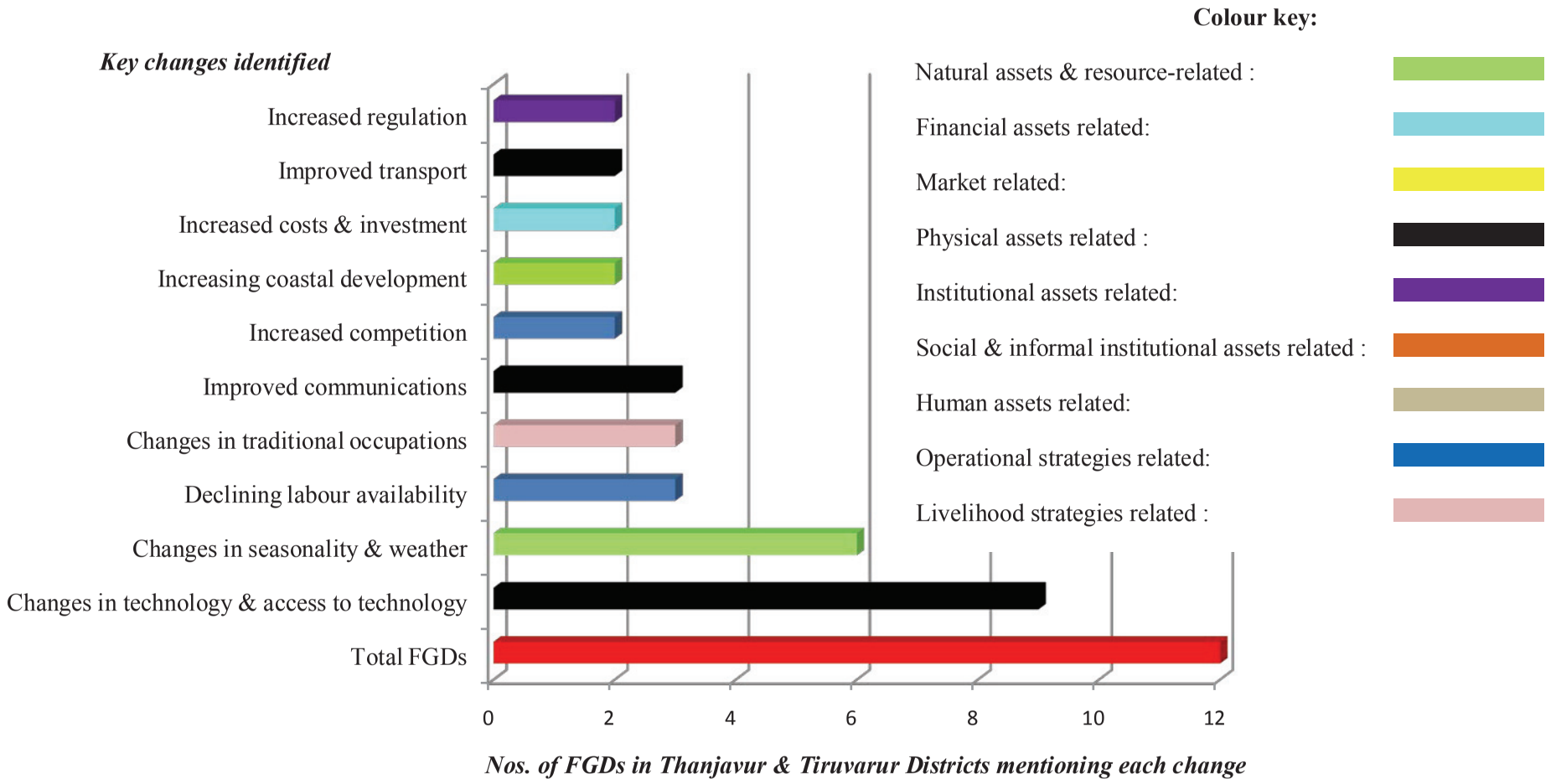


Figure 5.5.2 : Adaptive strategies identified during FGDs inThanjavur & Tiruvarur Districts

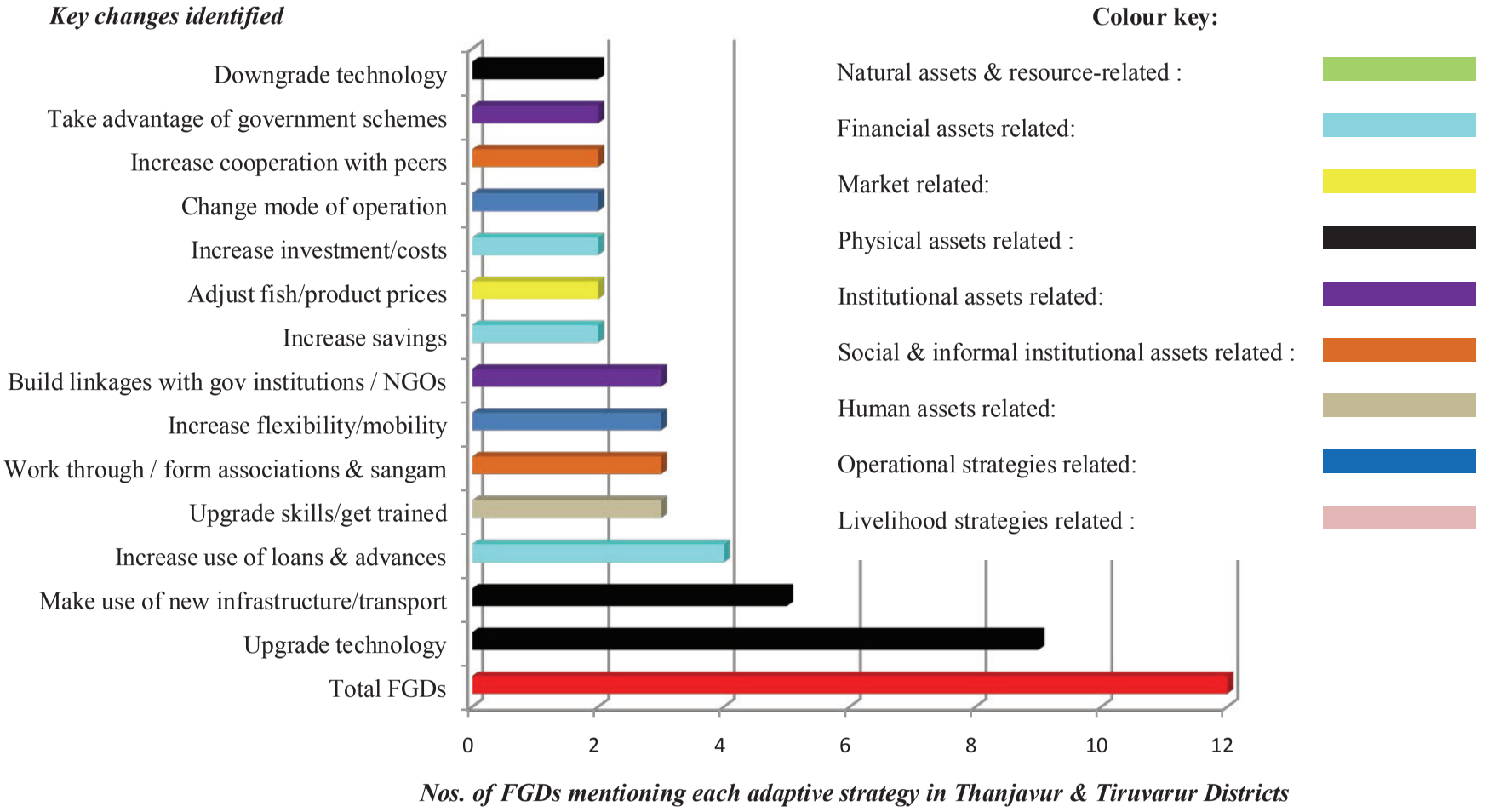


Figure 5.5.3 : Supporting factors identified during FGDs in Thanjavur & Tiruvarur Districts

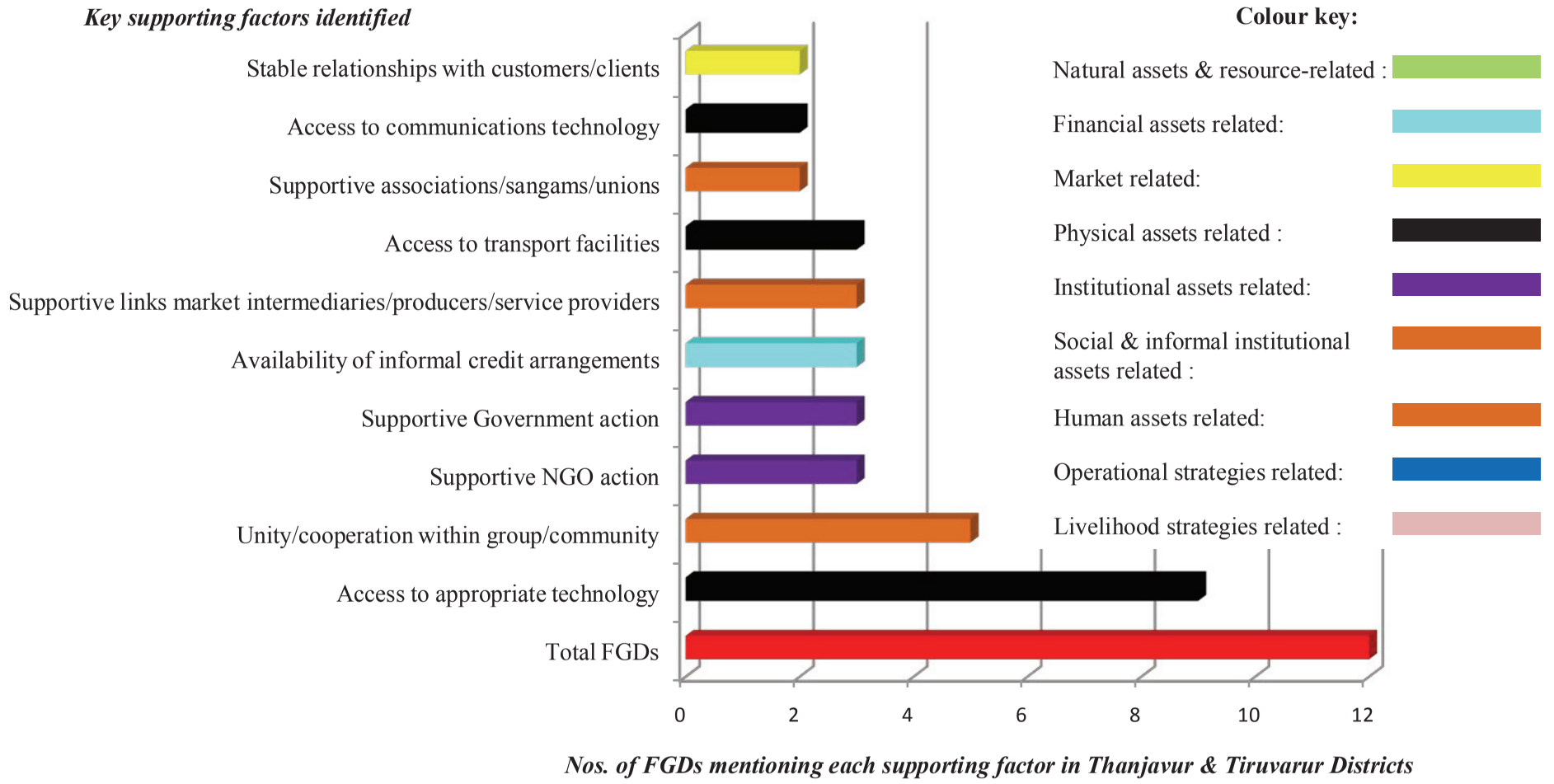
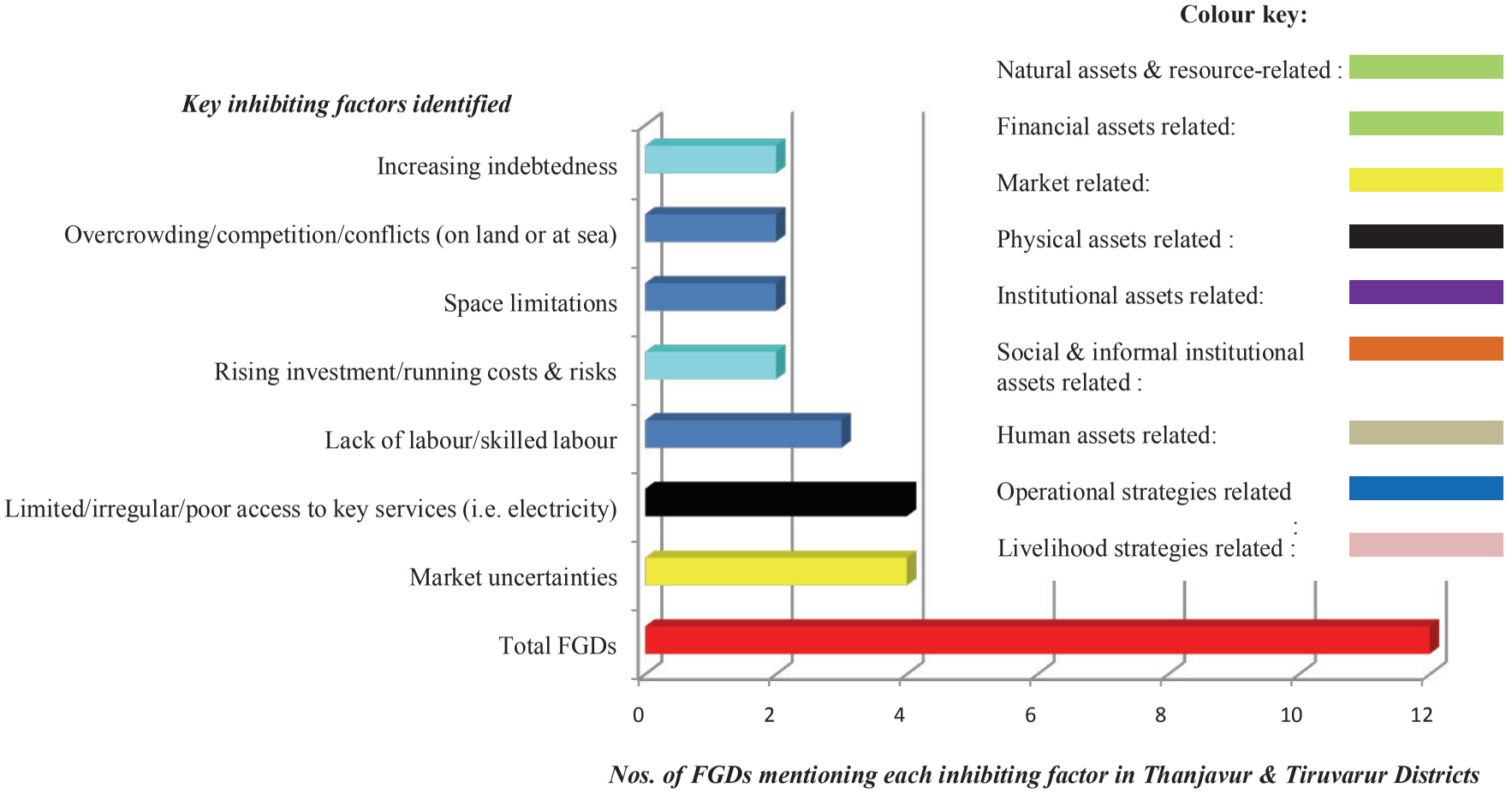


Figure 5.5.4 : Inhibiting factors identified during FGDs in Thanjavur & Tiruvarur Districts



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.6 Pudukottai and Ramnathapuram Districts, Tamil Nadu

Figure 5.6.1 : Key livelihood changes identified during FGDs in Pudukottai & Ramnathapuram Districts

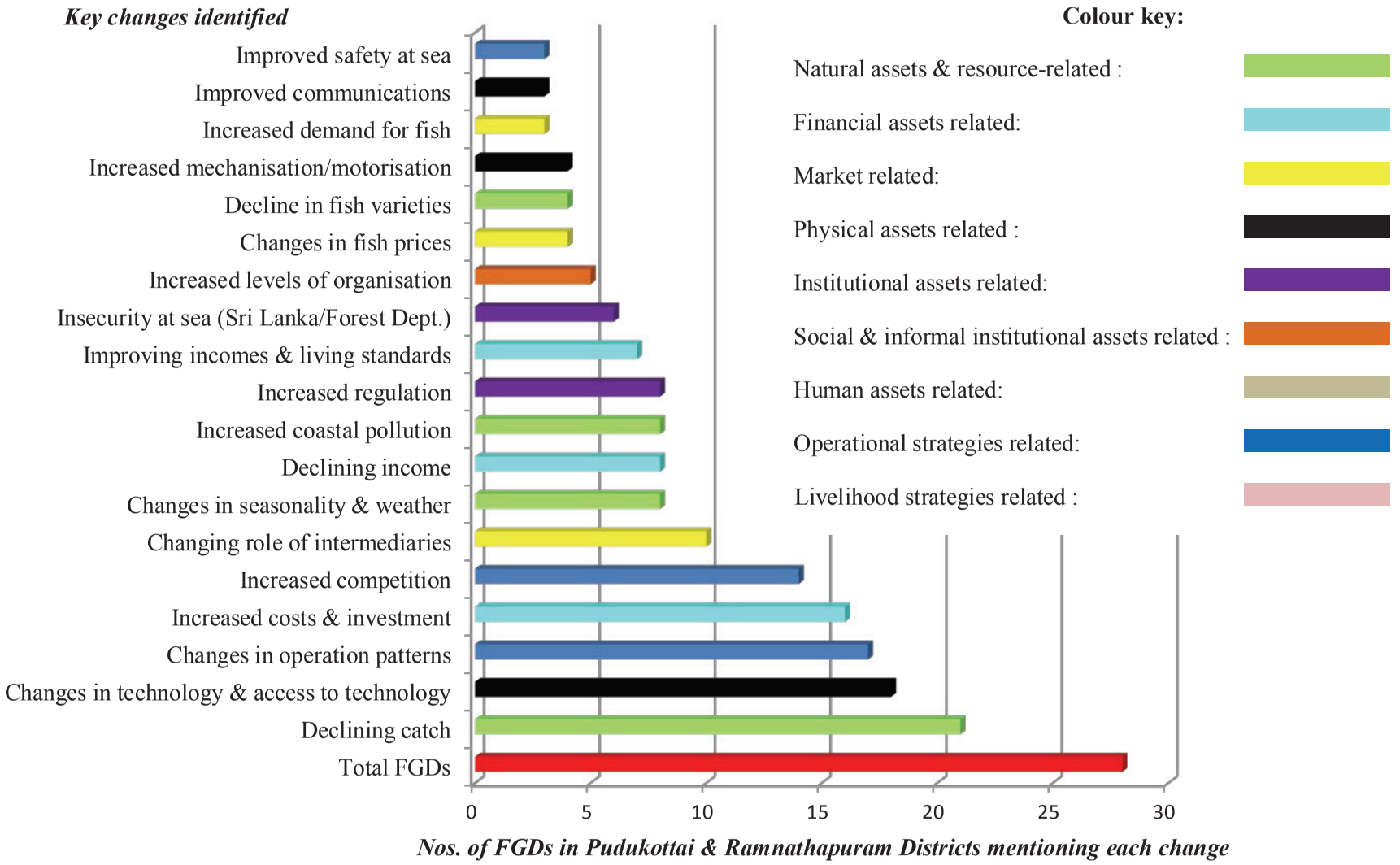


Figure 5.6.2 : Adaptive strategies identified during FGDs in Pudukottai & Ramnathapuram Districts

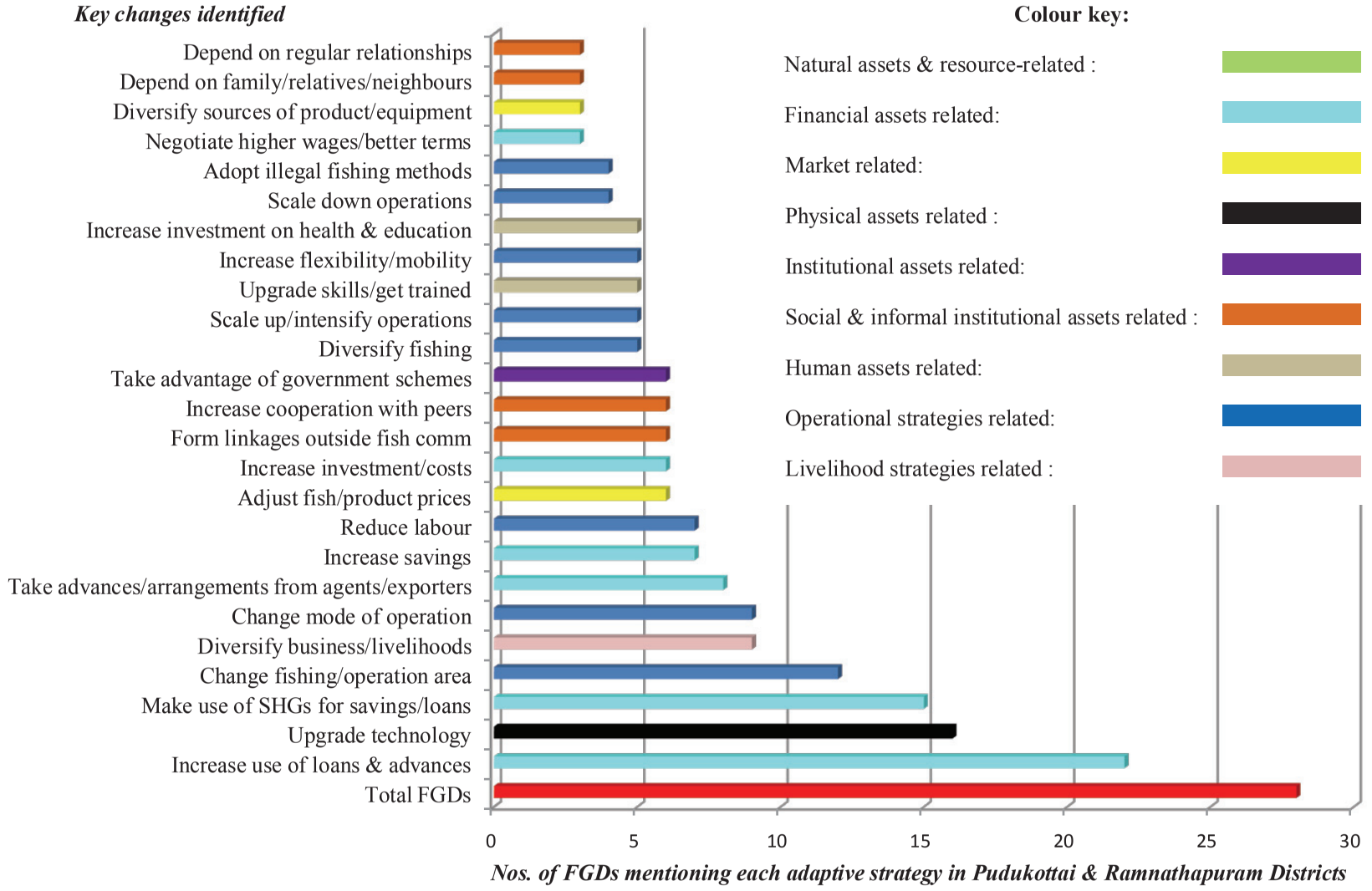


Figure 5.6.3 : Supporting factors identified during FGDs in Pudukottai & Ramnathapuram Districts

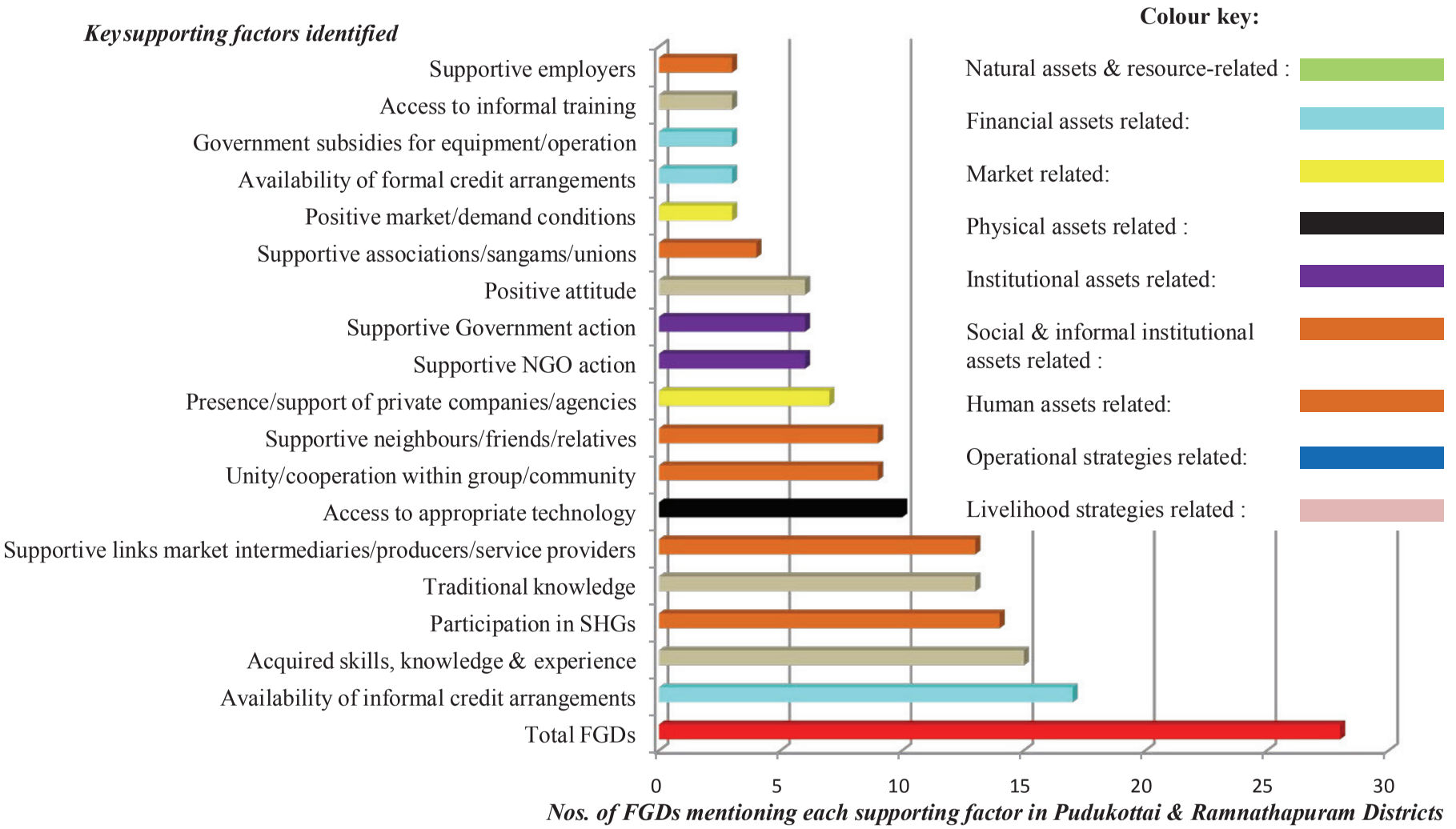
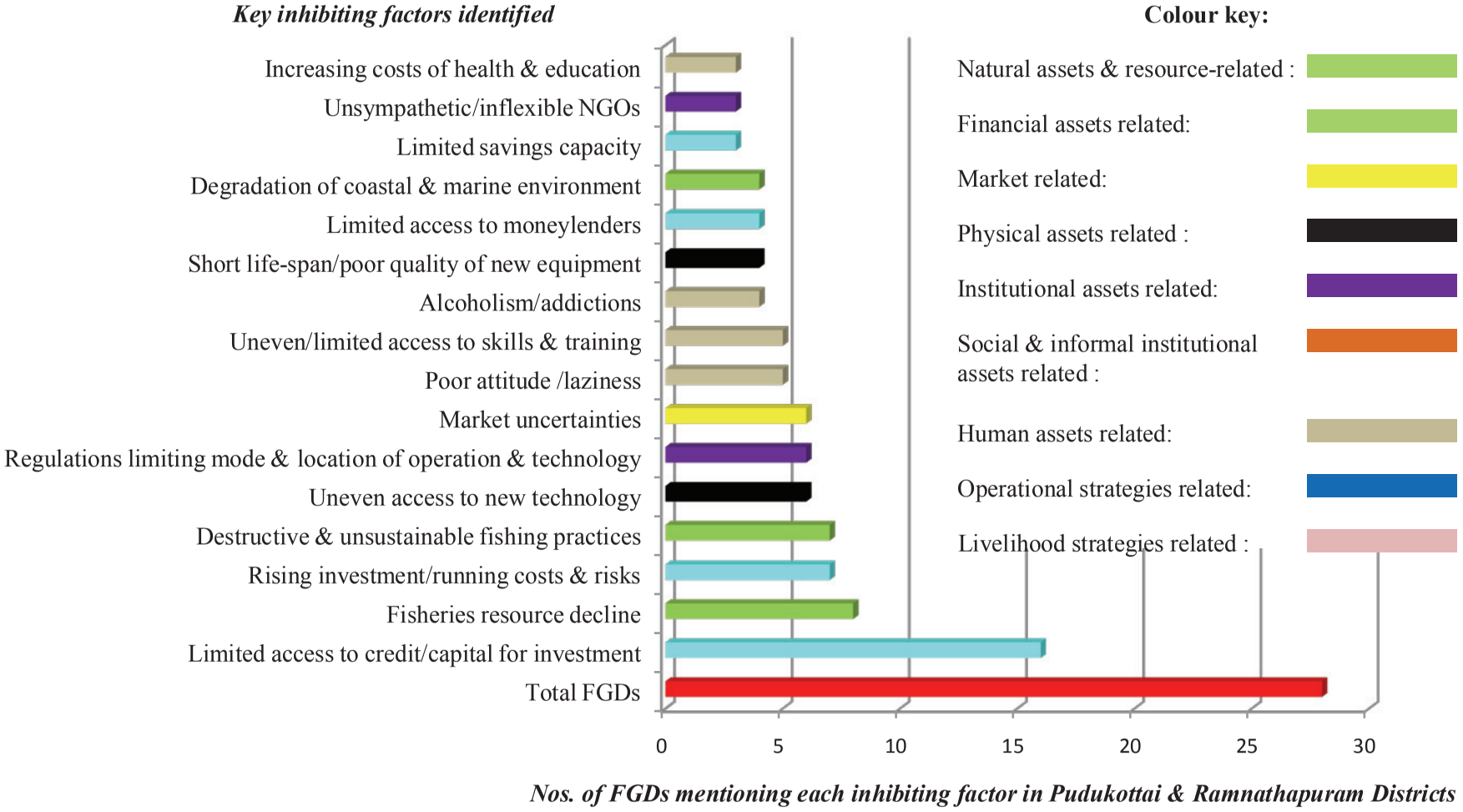


Figure 5.6.4 : Inhibiting factors identified during FGDs in Pudukottai & Ramnathapuram Districts



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.7 Thoothukudi and Tirunelveli Districts, Tamil Nadu

Figure 5.7.1 : Key livelihood changes identified during FGDs in Thoothukudi & Tirunelveli Districts

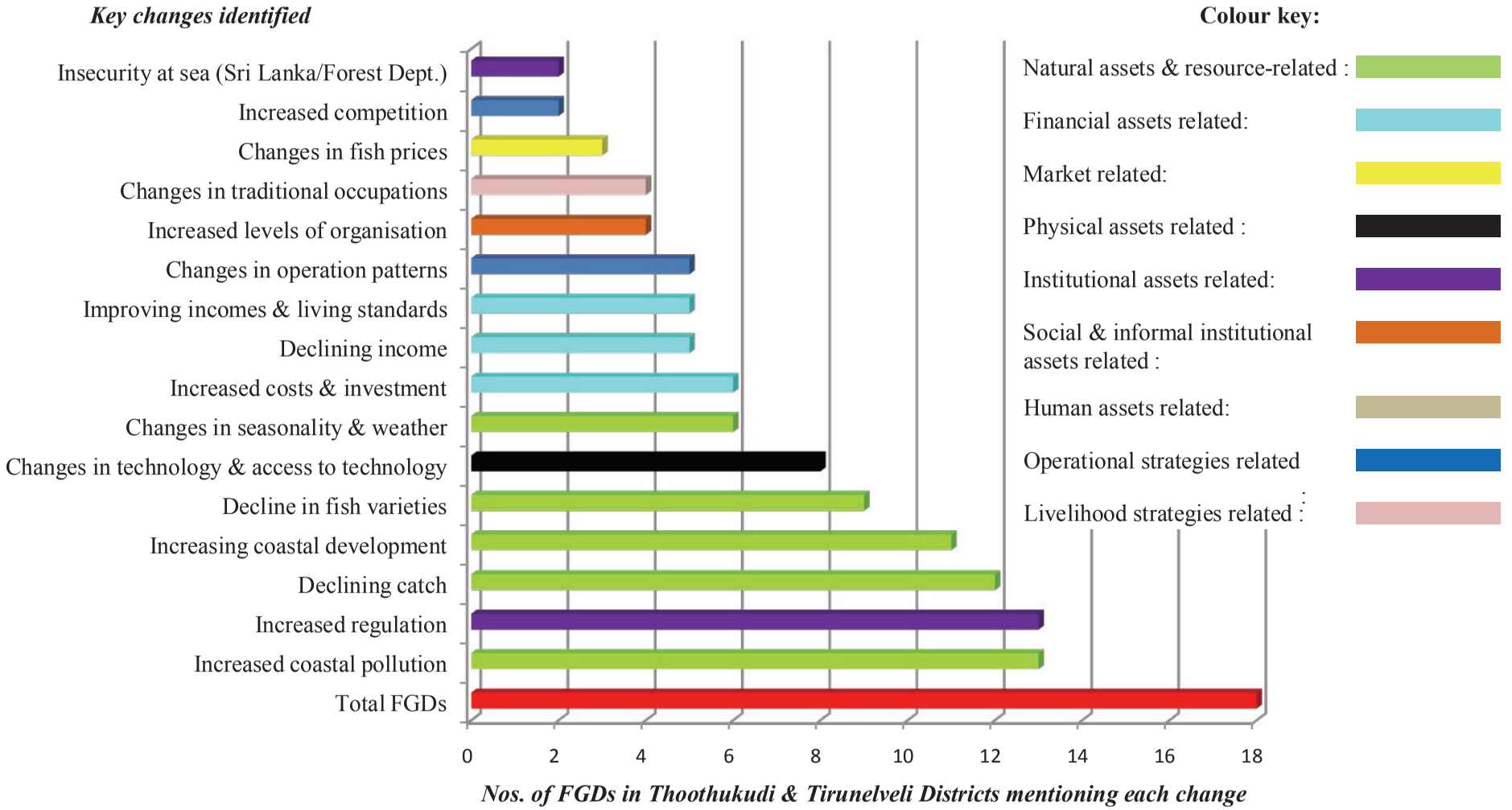


Figure 5.7.2 : Adaptive strategies identified during FGDs in Thoothukudi & Tirunelveli Districts

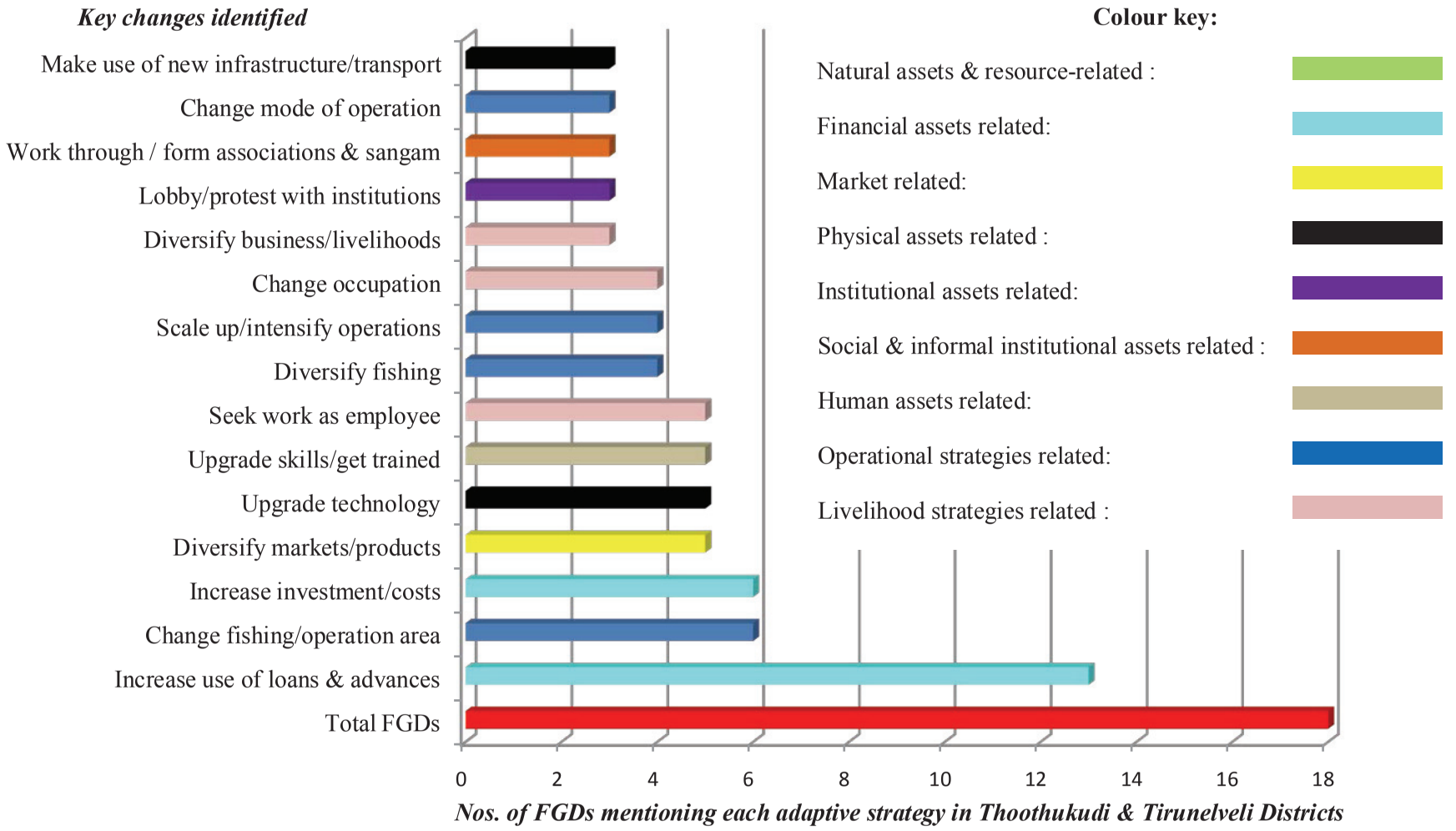


Figure 5.7.3 : Supporting factors identified during FGDs in Thoothukudi & Tirunelveli Districts

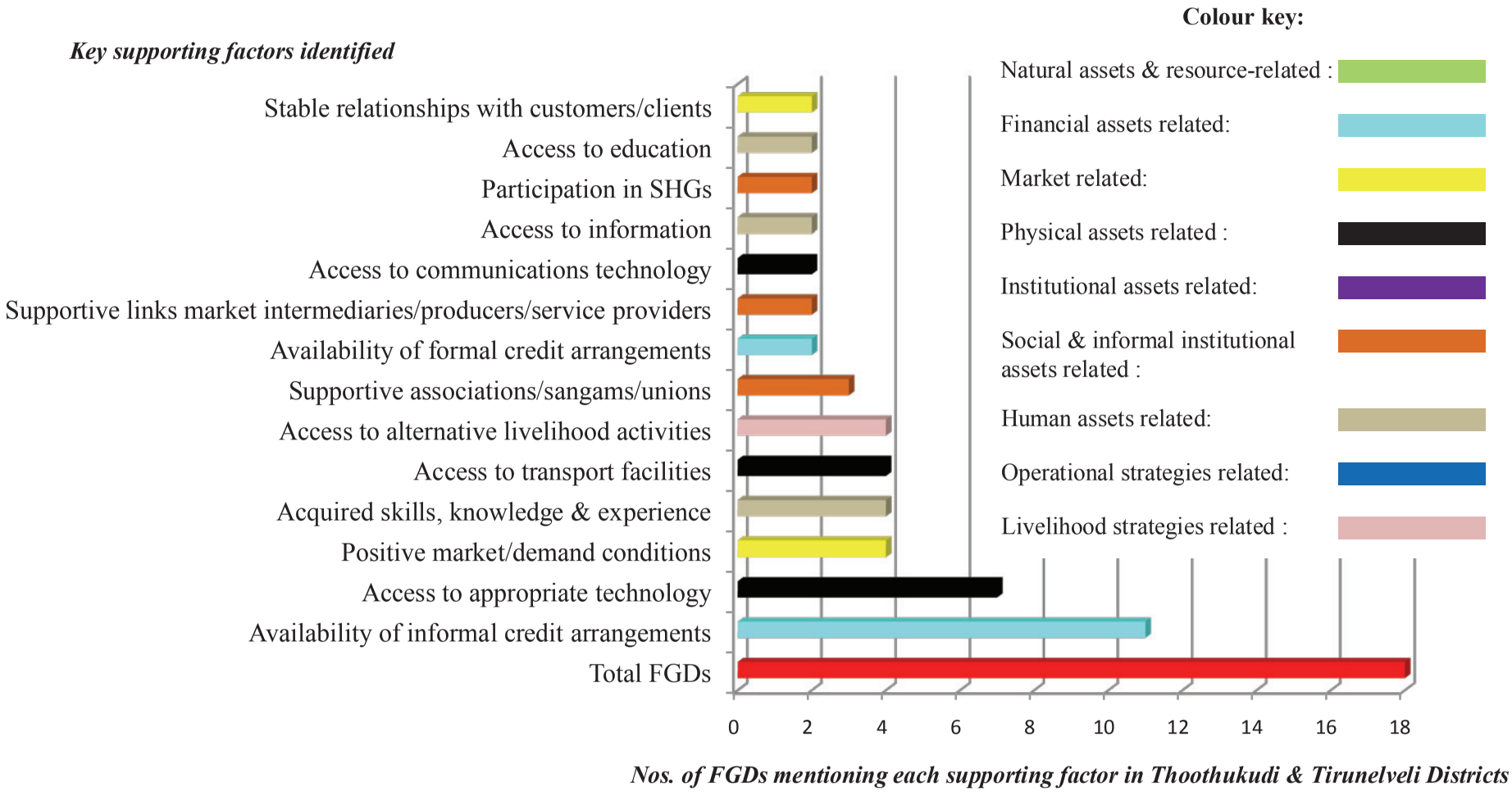
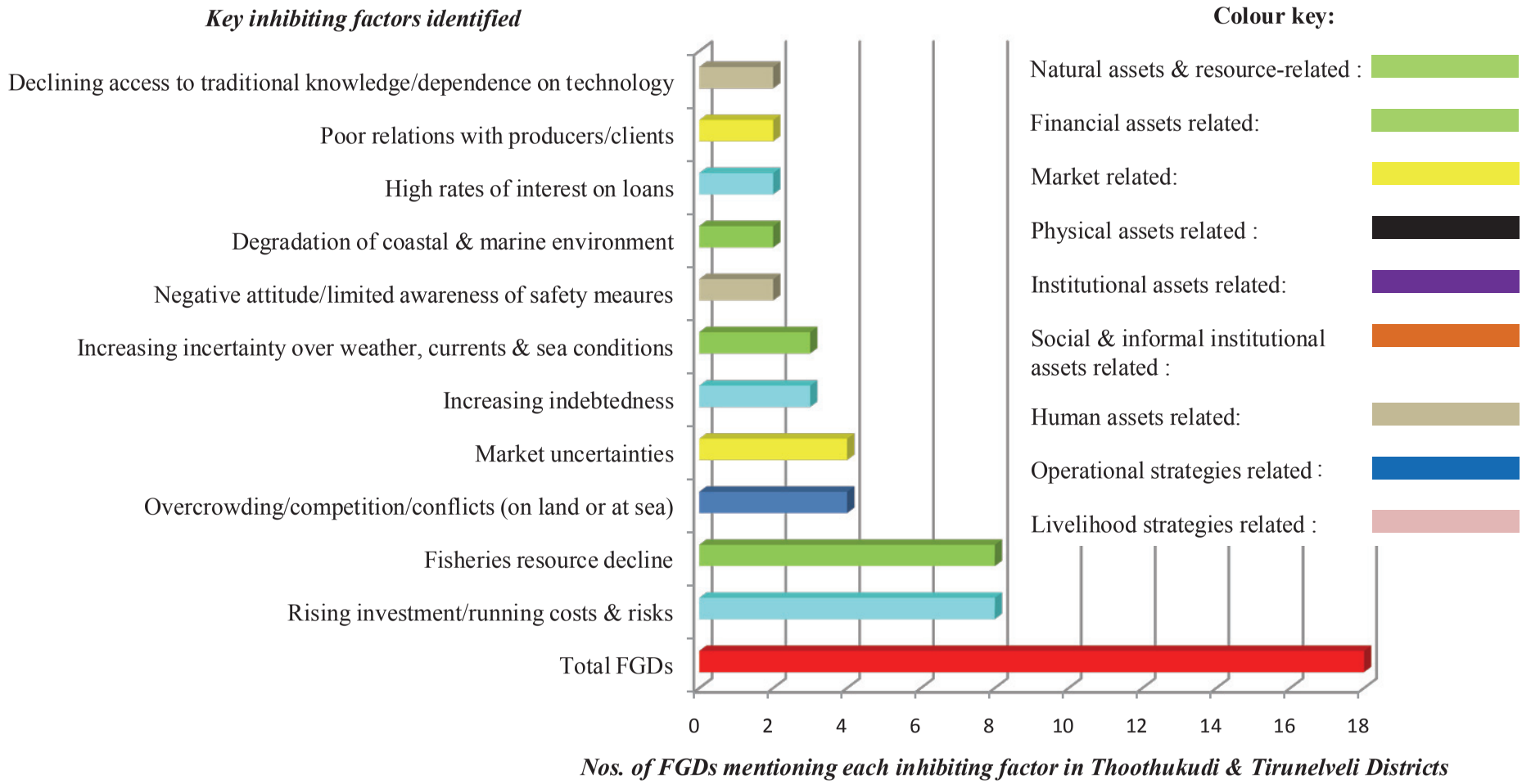


Figure 5.7.4 : Inhibiting factors identified during FGDs in Thoothukudi & Tirunelveli Districts



Area-based analysis of perceptions of change and responses to change fisheries stakeholder groups

Annex 5.8 Kanyakumari District, Tamil Nadu

Figure 5.8.1 : Key livelihood changes identified during FGDs in Kanyakumari District

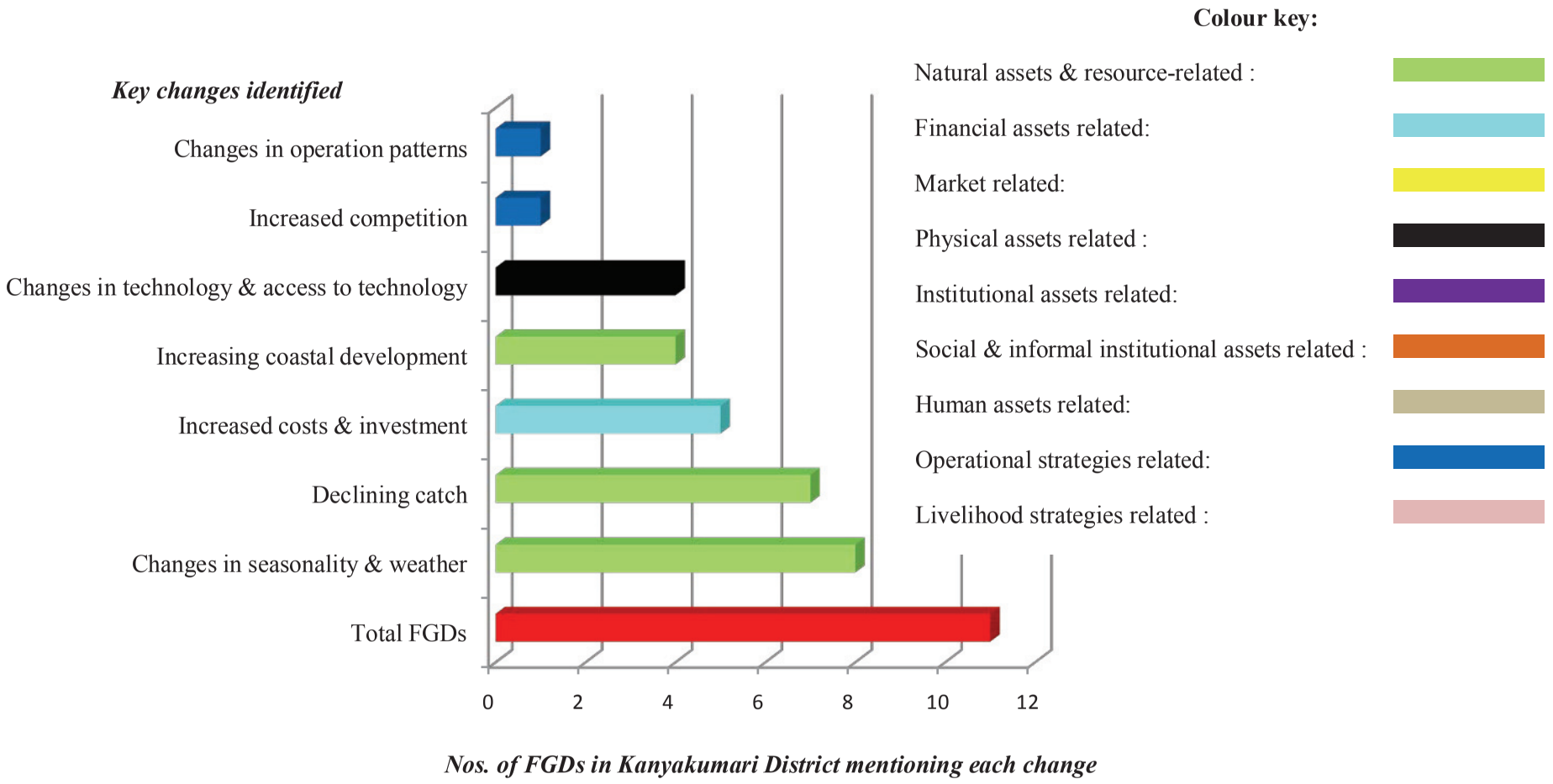


Figure 5.8.2 : Adaptive strategies identified during FGDs in Kanyakumari District

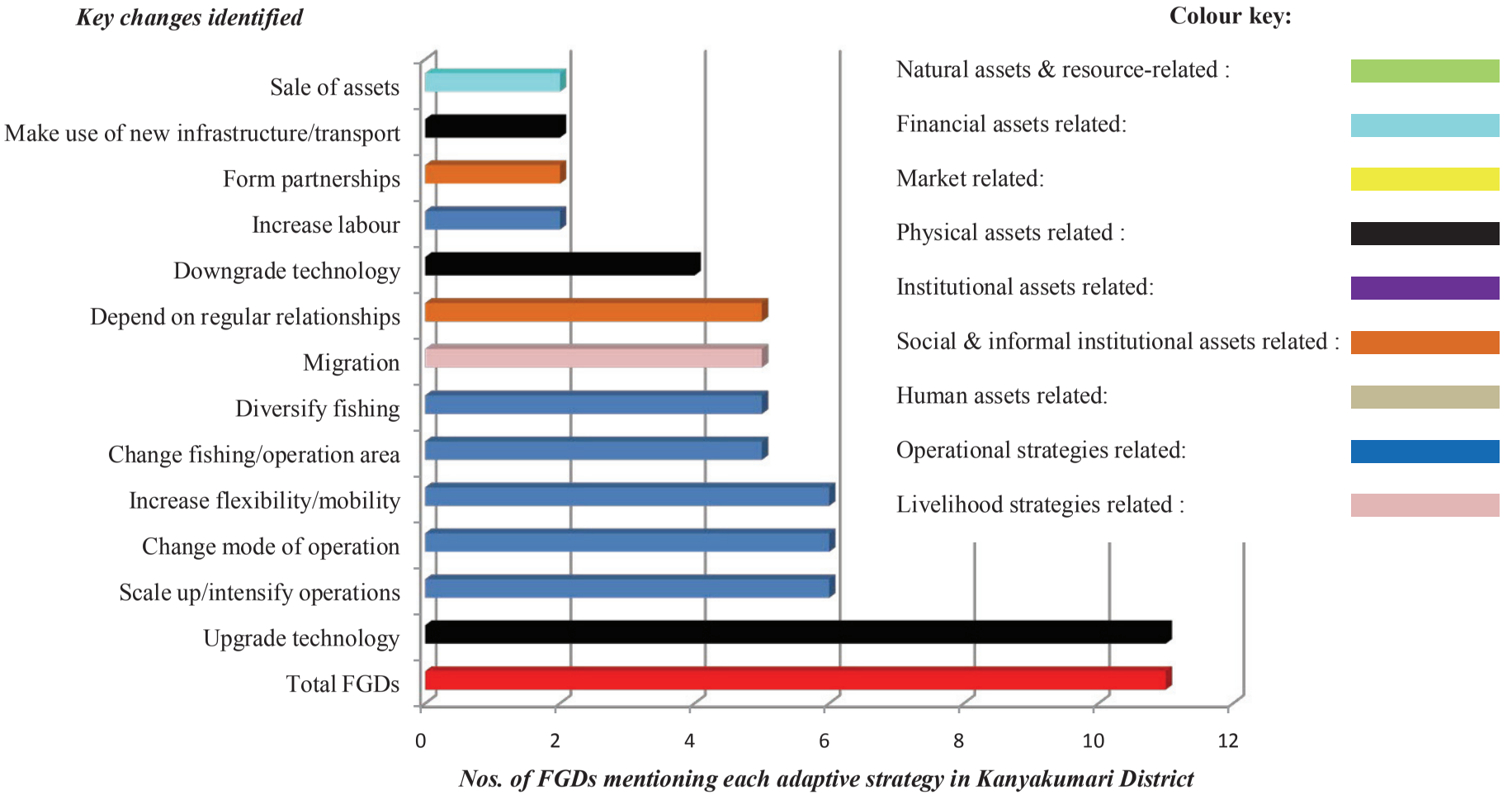


Figure 5.8.3 : Supporting factors identified during FGDs in KanyakumariDistrict

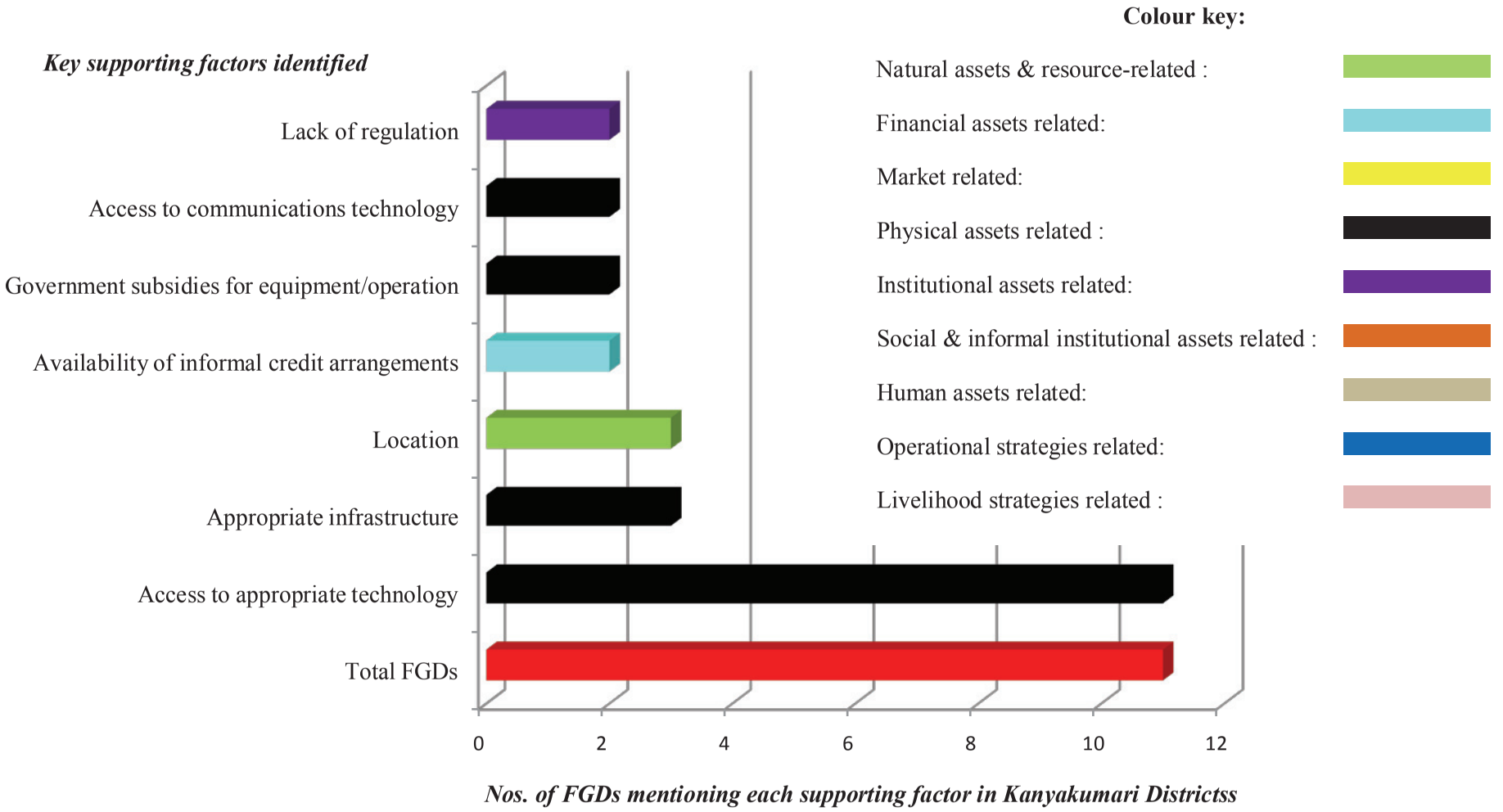
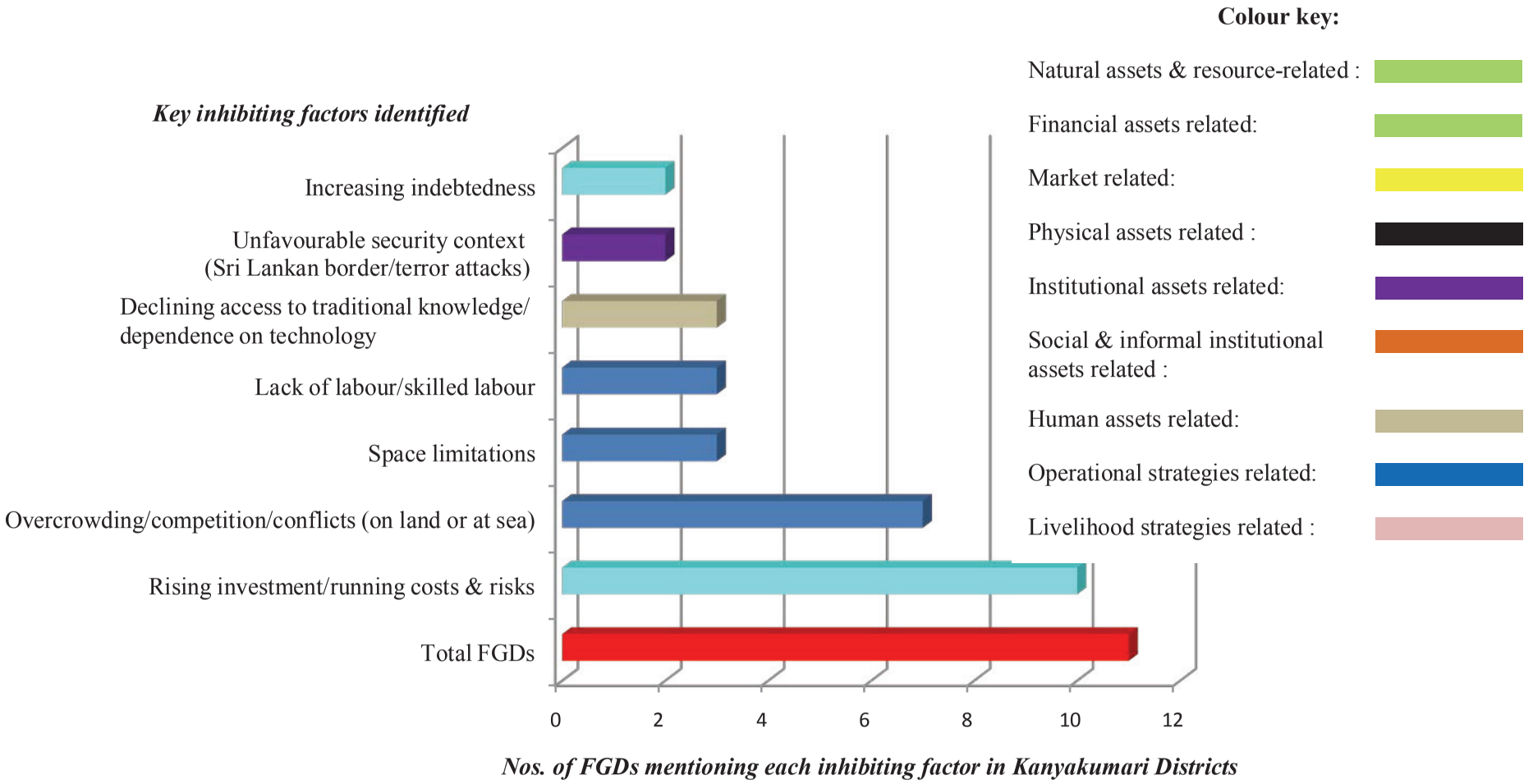


Figure 5.8.4 : Inhibiting factors identified during FGDs in Kanyakumari Districts



Annex 6

FIMSUL Stakeholder and Livelihoods Analysis Process Analysis of Stakeholders' Perceptions of Future Change and their Aspirations for the Future – By Stakeholder Group

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Annex 6.1 Analysis of perceptions of future change and aspirations across all fisheries stakeholders

Figure 6.1.1 : Future positive changes identified during FGDs with all stakeholder groups

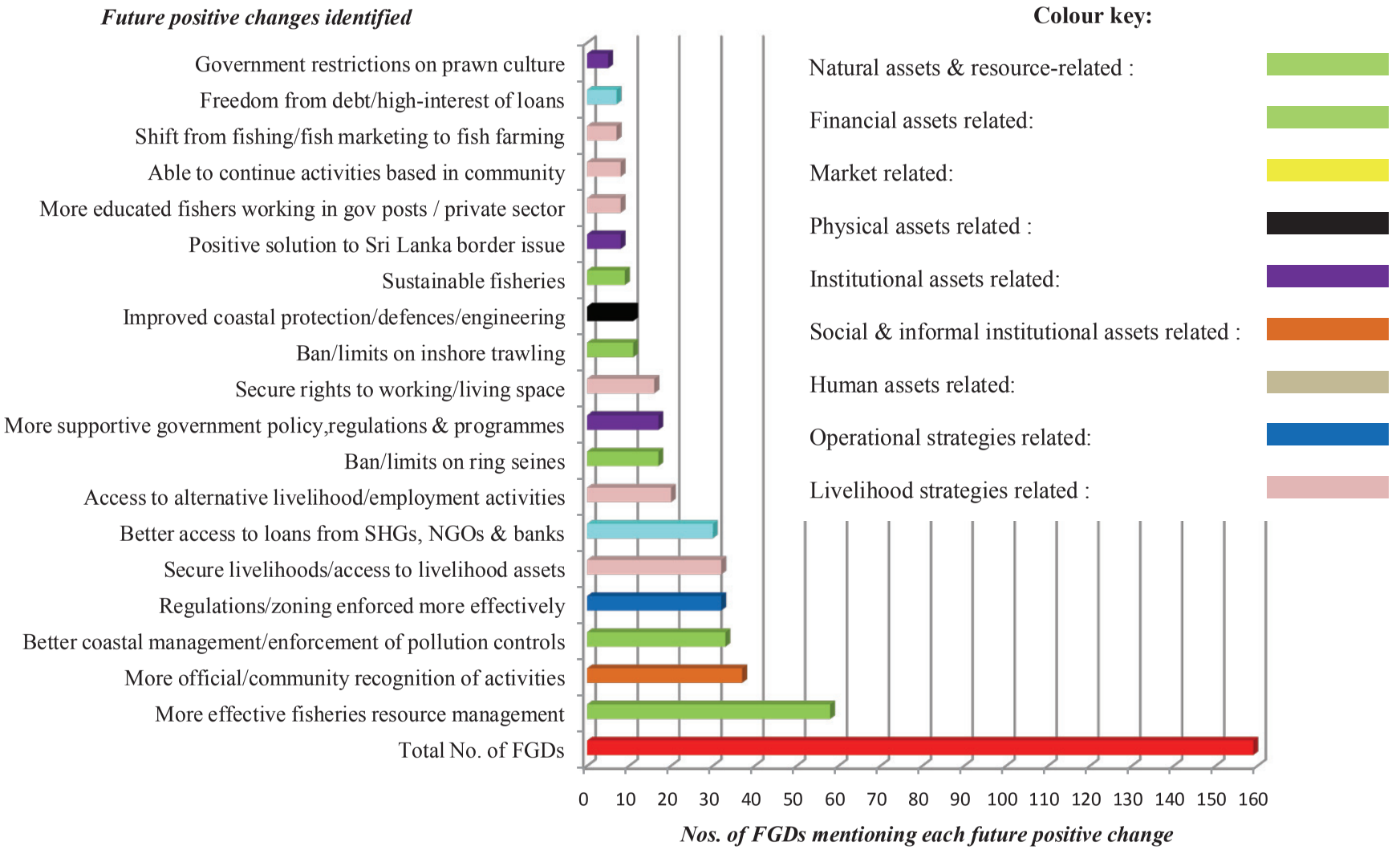


Figure 6.1.2 : Individual aspirations for the future identified during FGDs with all stakeholder groups

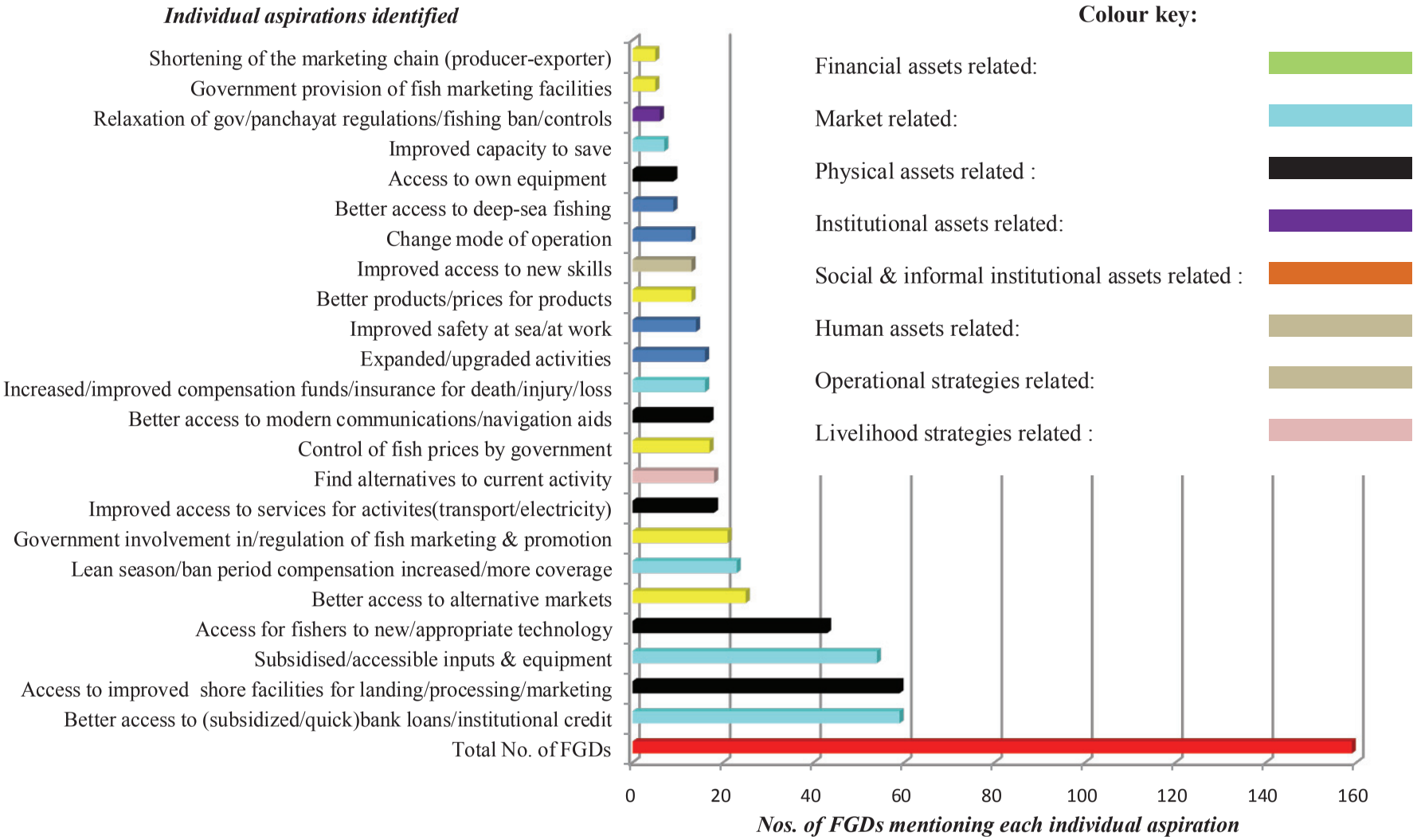


Figure 6.1.3 : Aspirations for children identified during FGDs with all stakeholder groups

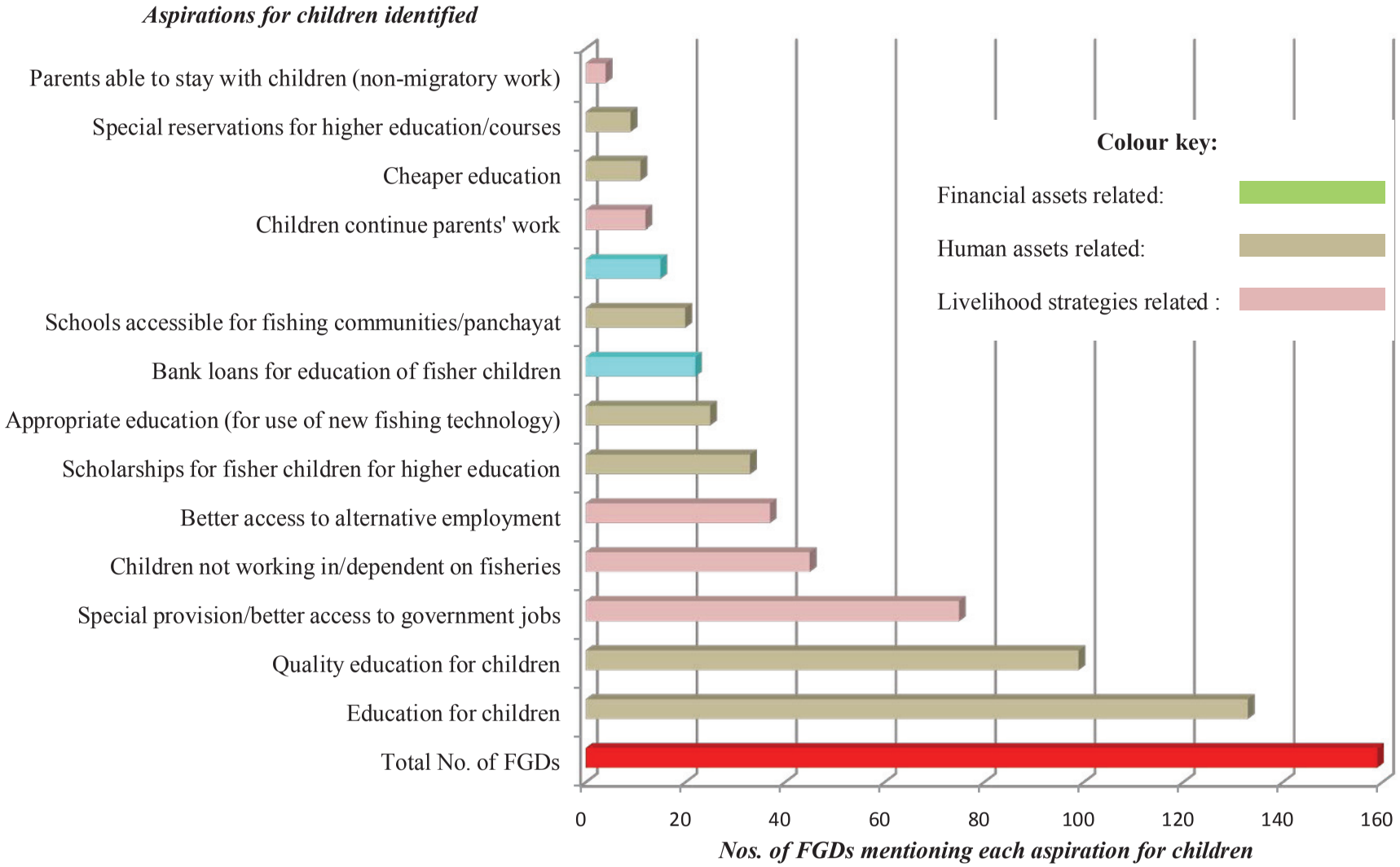
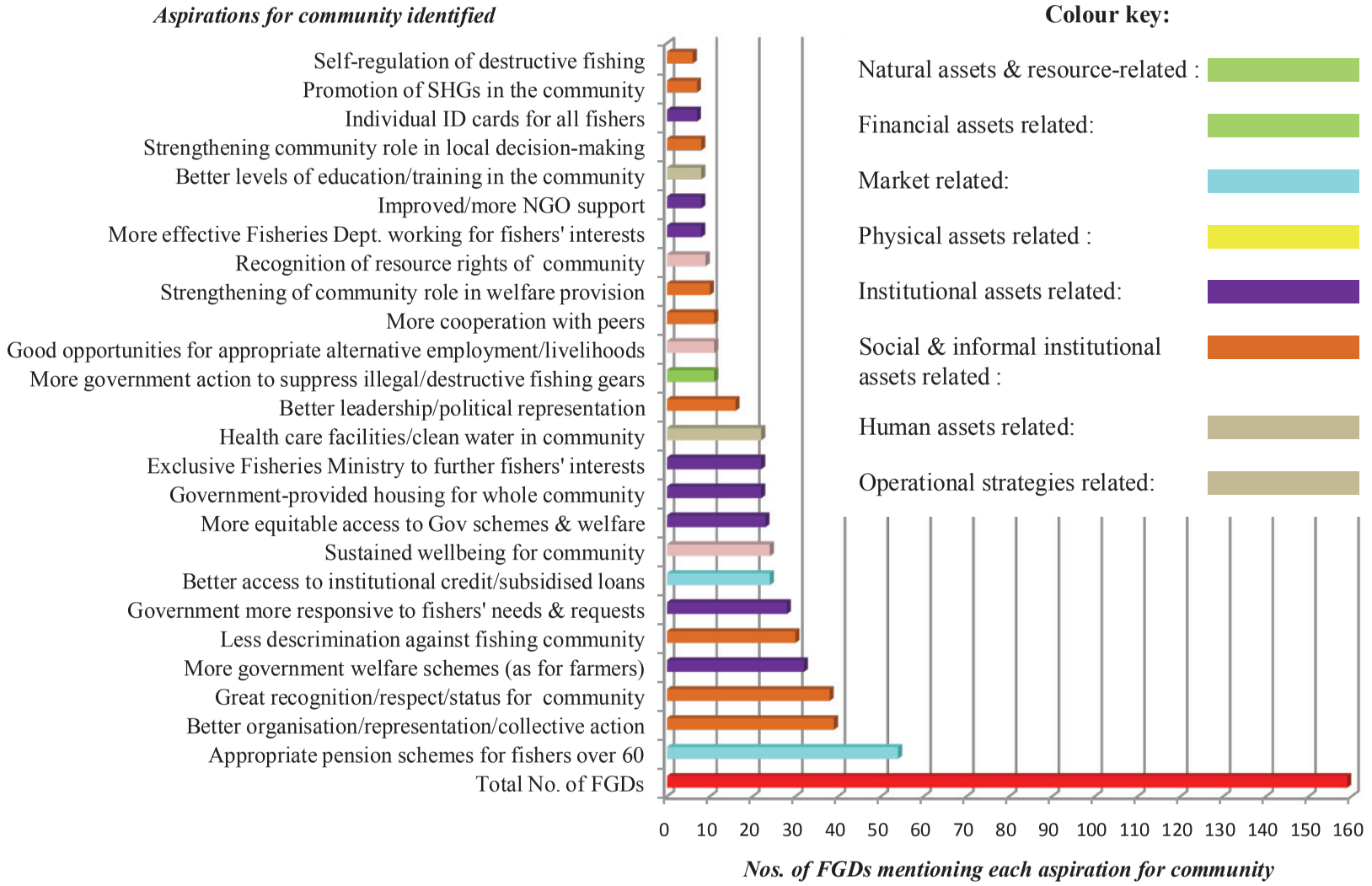


Figure 6.1.4 : Aspirations for their community identified during FGDs with all stakeholder groups



Annex 6.2 Analysis of perceptions of future change and aspirations among fisher stakeholder groups

(All fisher groups, FRP boat owners, trawler owners, traditional craft operators, fishing crew)

Annex 6.2.1 Analysis of perceptions of future change and aspirations among fisher stakeholder groups

Figure 6.2.1.1 : Future positive changes identified during FGDs with fisher stakeholder groups

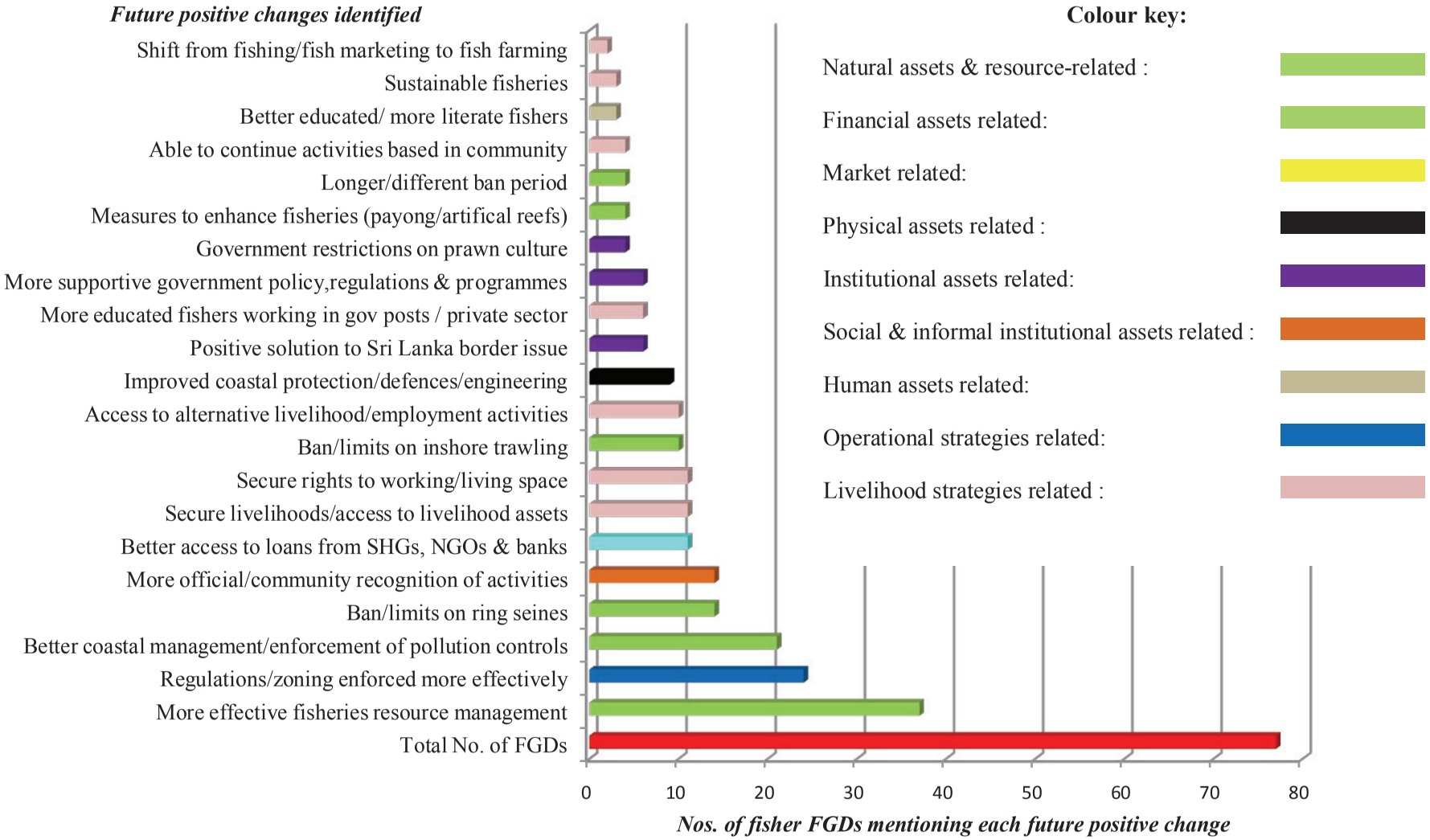


Figure 6.2.1.2 : Individual aspirations for the future identified during FGDs with fisher stakeholder groups

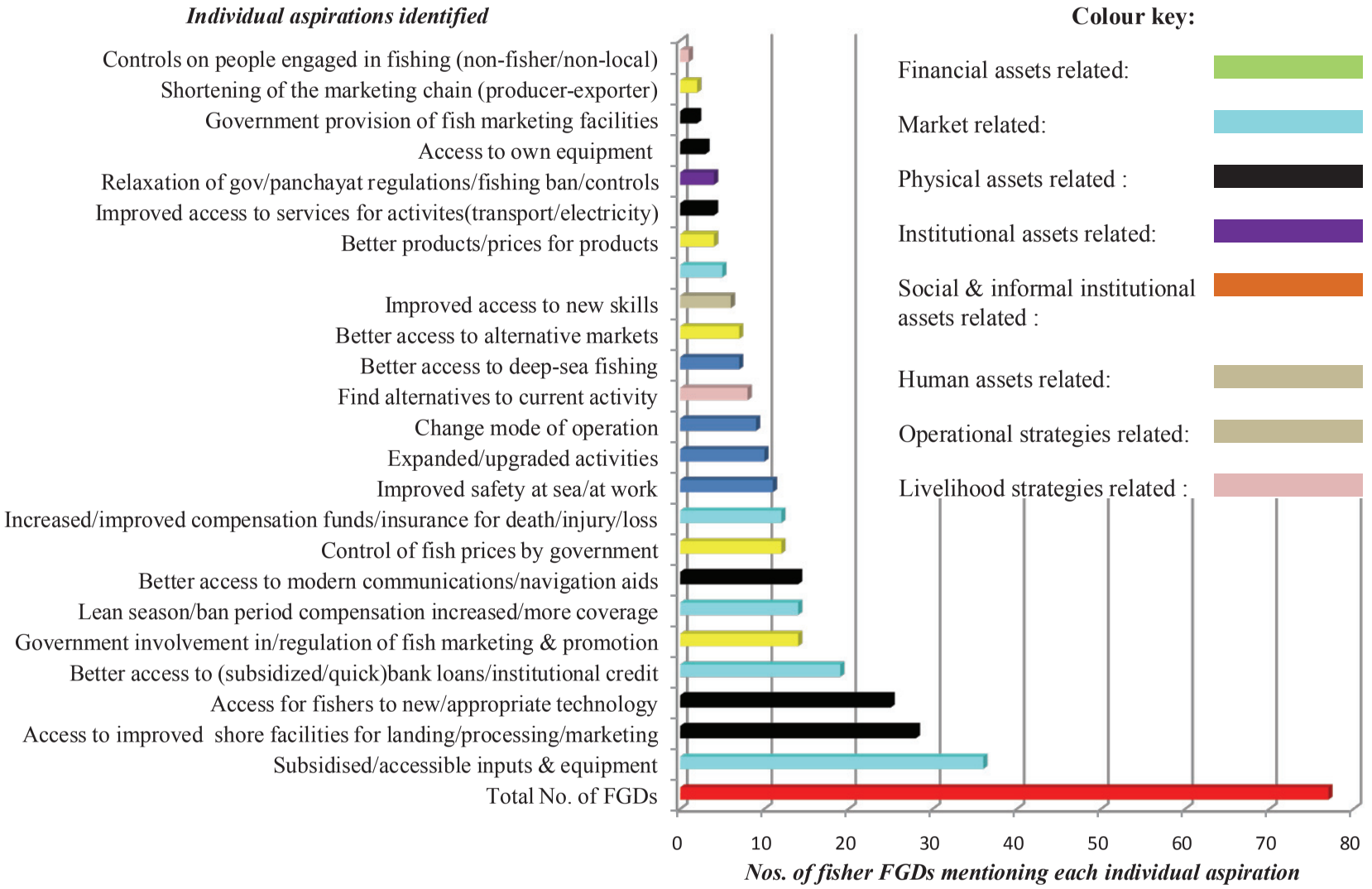


Figure 6.2.1.3 : Aspirations for children identified during FGDs with fisher stakeholder groups

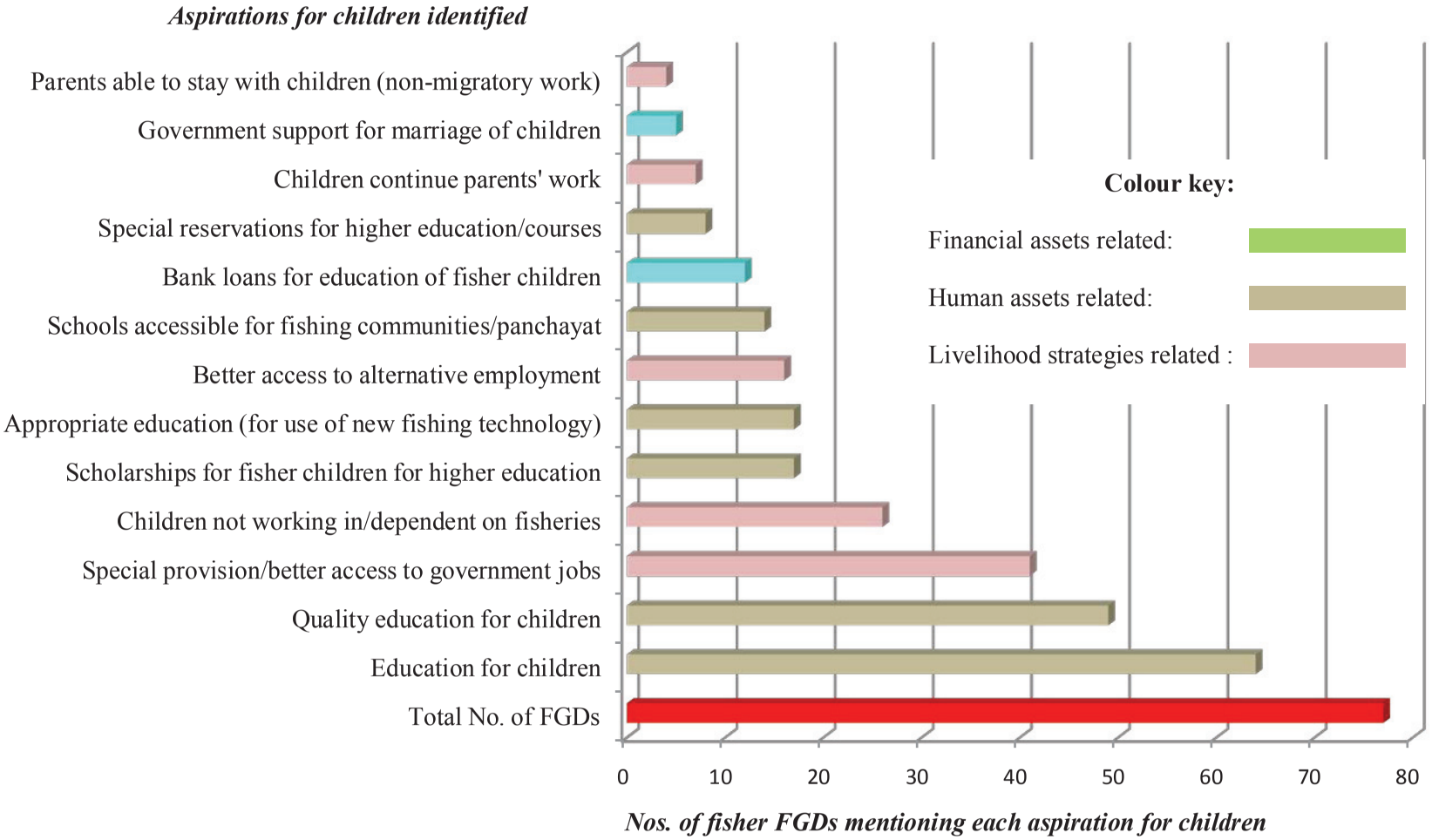
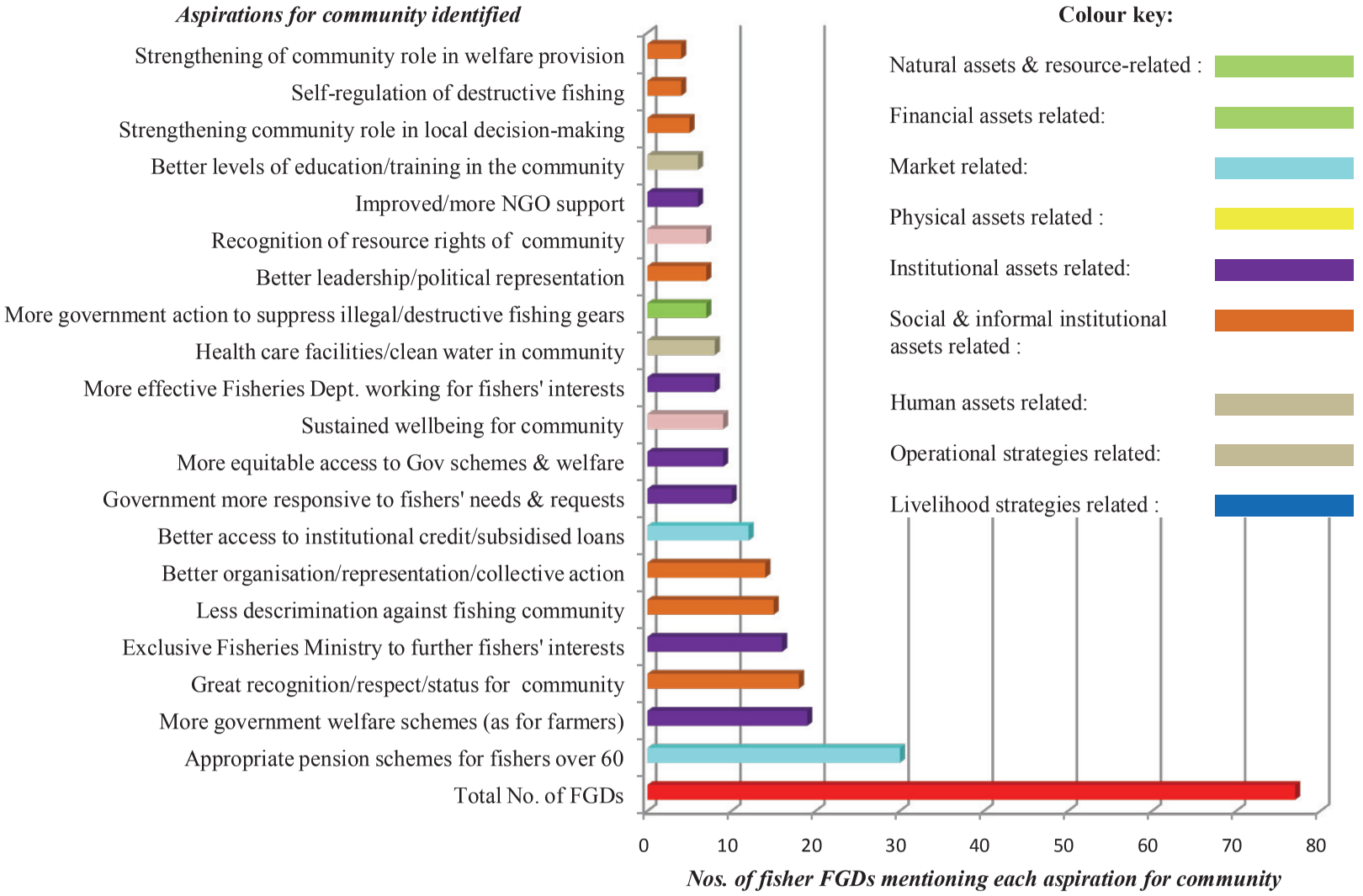


Figure 6.2.1.4 : Aspirations for their community identified during FGDs with fisher stakeholder groups



Annex 6.2.2 Analysis of perceptions of future change and aspirations among FRP boat owner stakeholder groups

Figure 6.2.2.1 : Future positive changes identified during FGDs with FRP boat owners

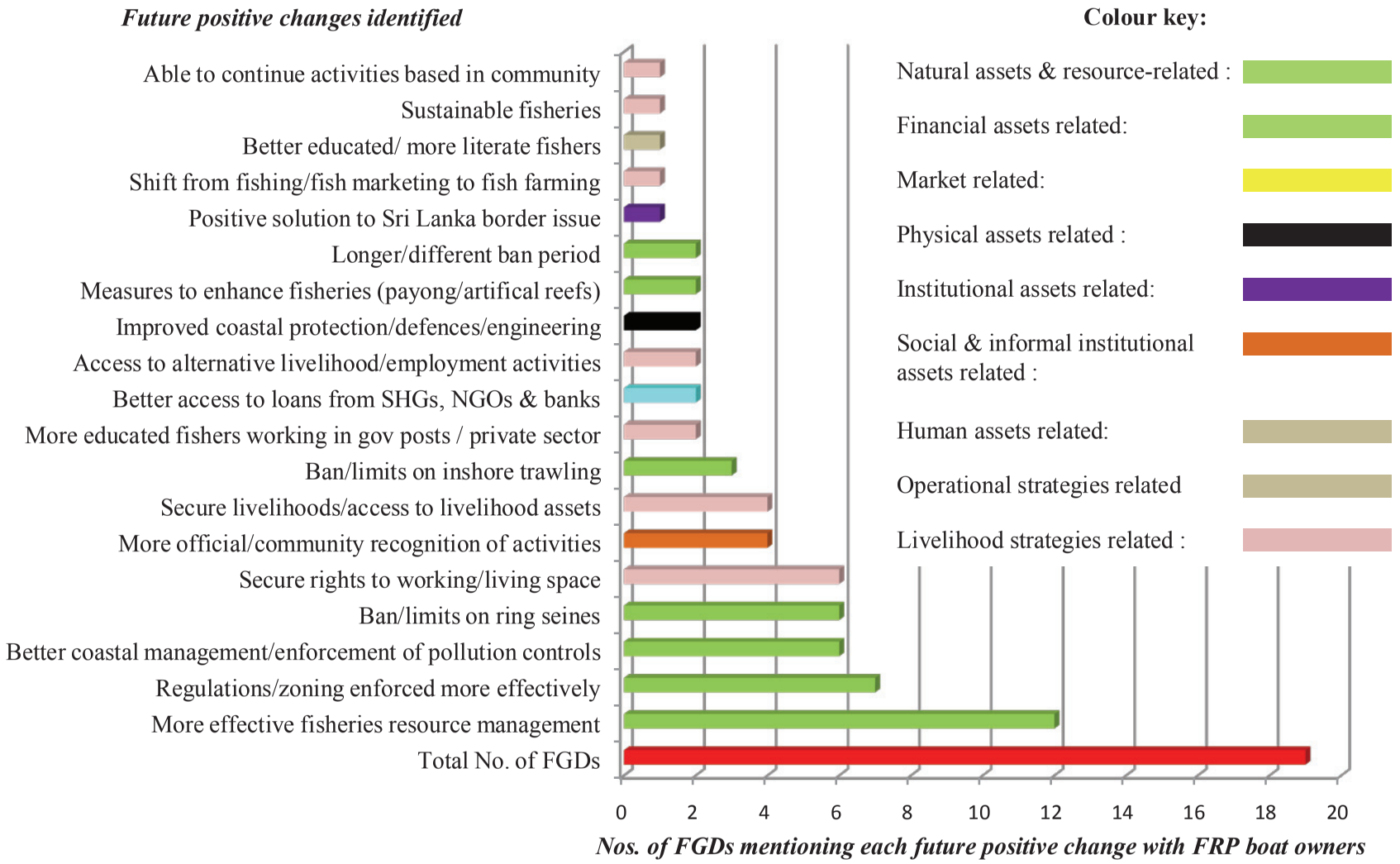


Figure 6.2.2.2 : Individual aspirations for the future identified during FGDs with FRP boat owners

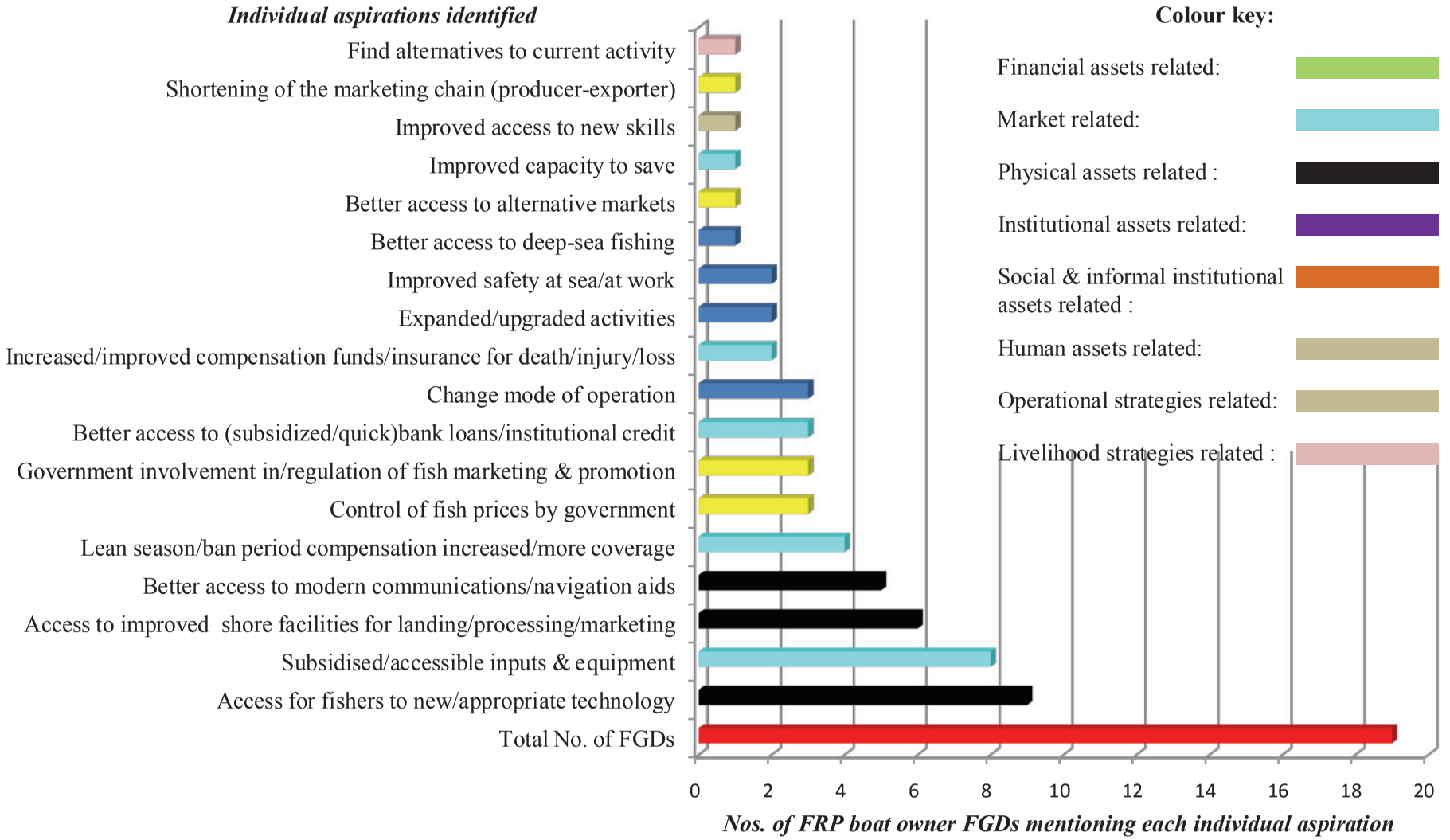
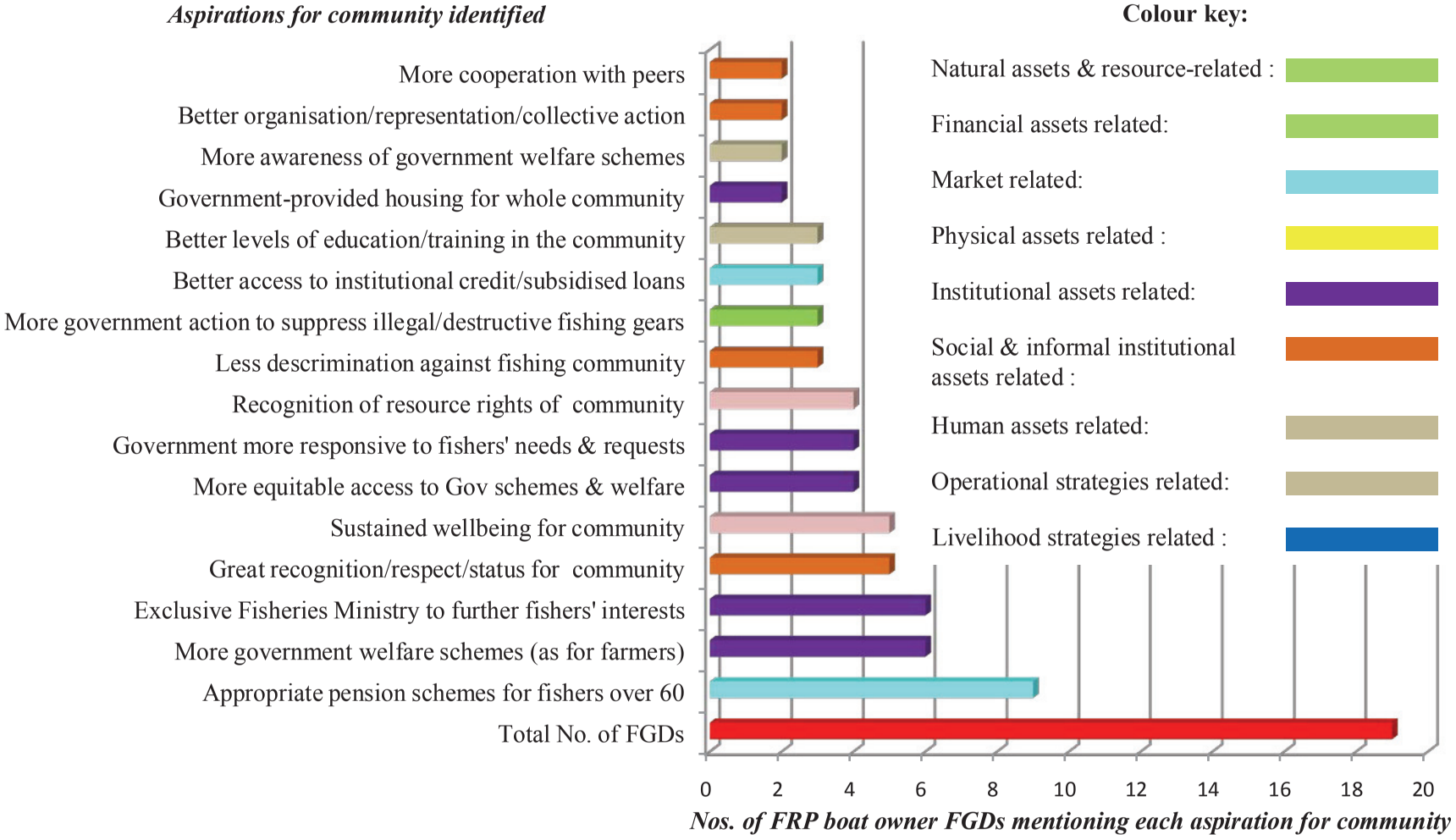


Figure 6.2.2.3 : Aspirations for their community identified during FGDs with FRP boat owners



Annex 6.2.3 Analysis of perceptions of future change and aspirations among traditional craft operator stakeholder groups

Figure 6.2.3.1 : Future positive changes identified during FGDs with trawler owners

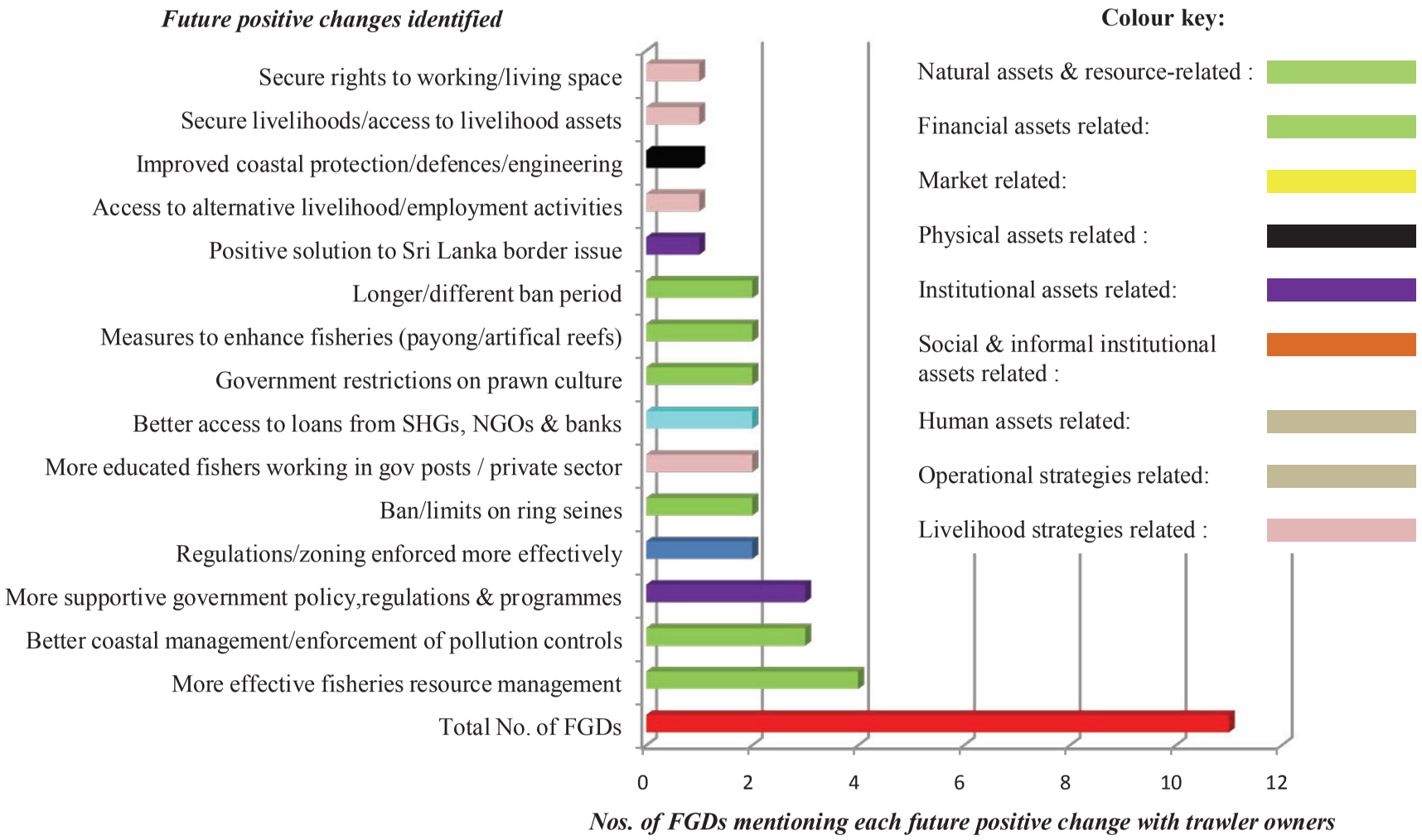


Figure 6.2.3.2 : Individual aspirations for the future identified during FGDs with trawler owners

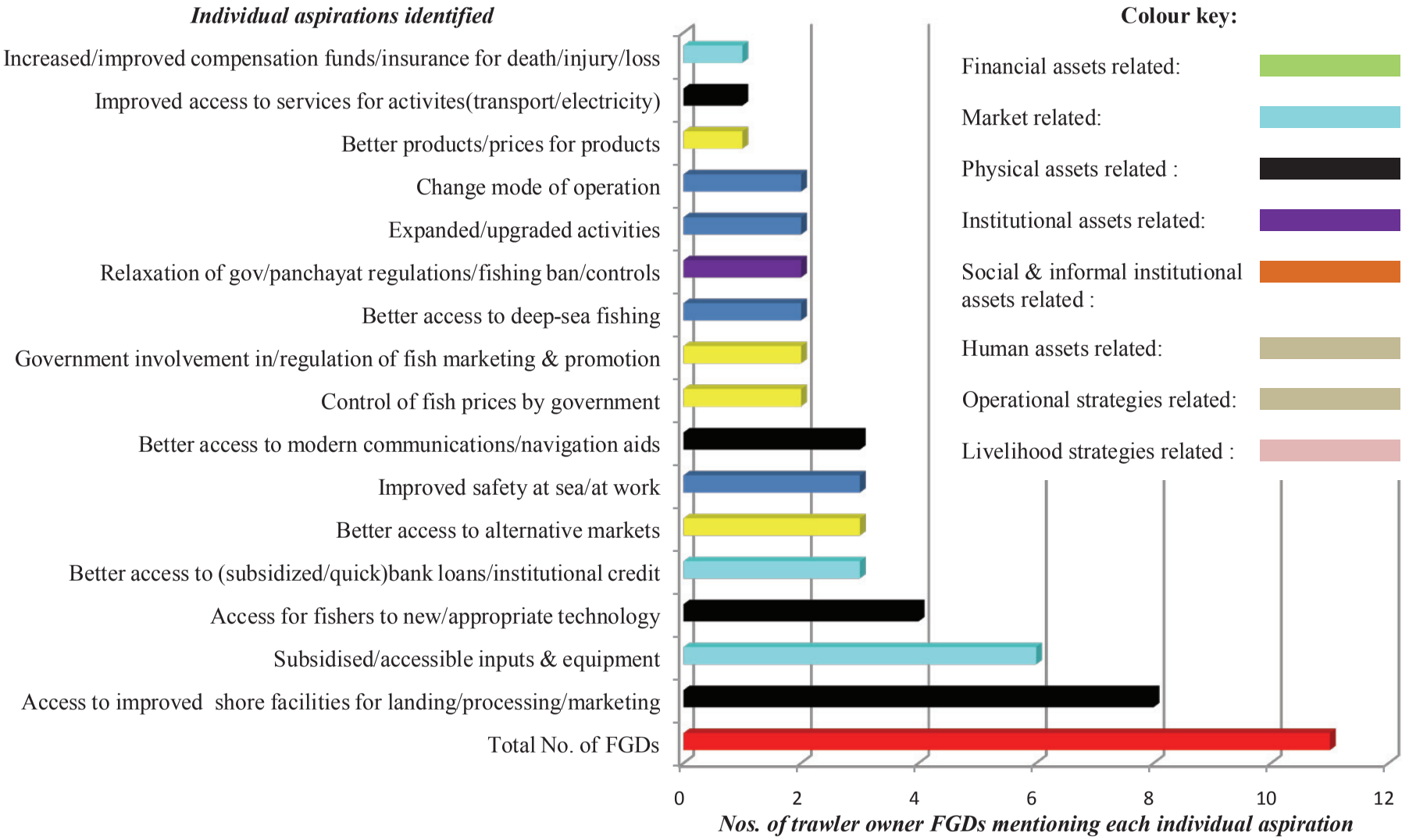
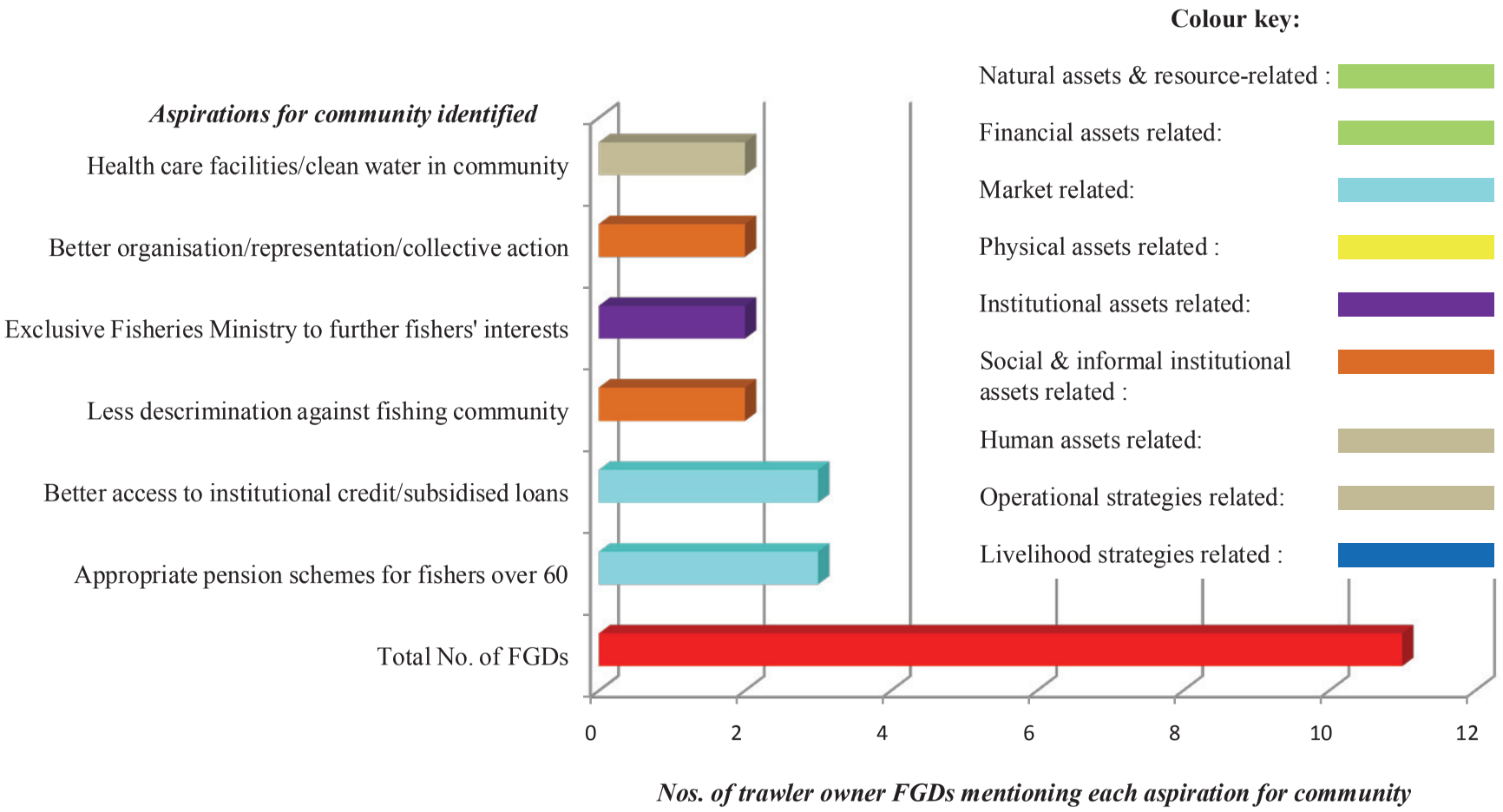


Figure 6.2.3.3 : Aspirations for their community identified during FGDs with trawler owners



Annex 6.2.4 Analysis of perceptions of future change and aspirations among traditional craft operator stakeholder groups

Figure 6.2.4.1 : Future positive changes identified during FGDs with traditional craft operators

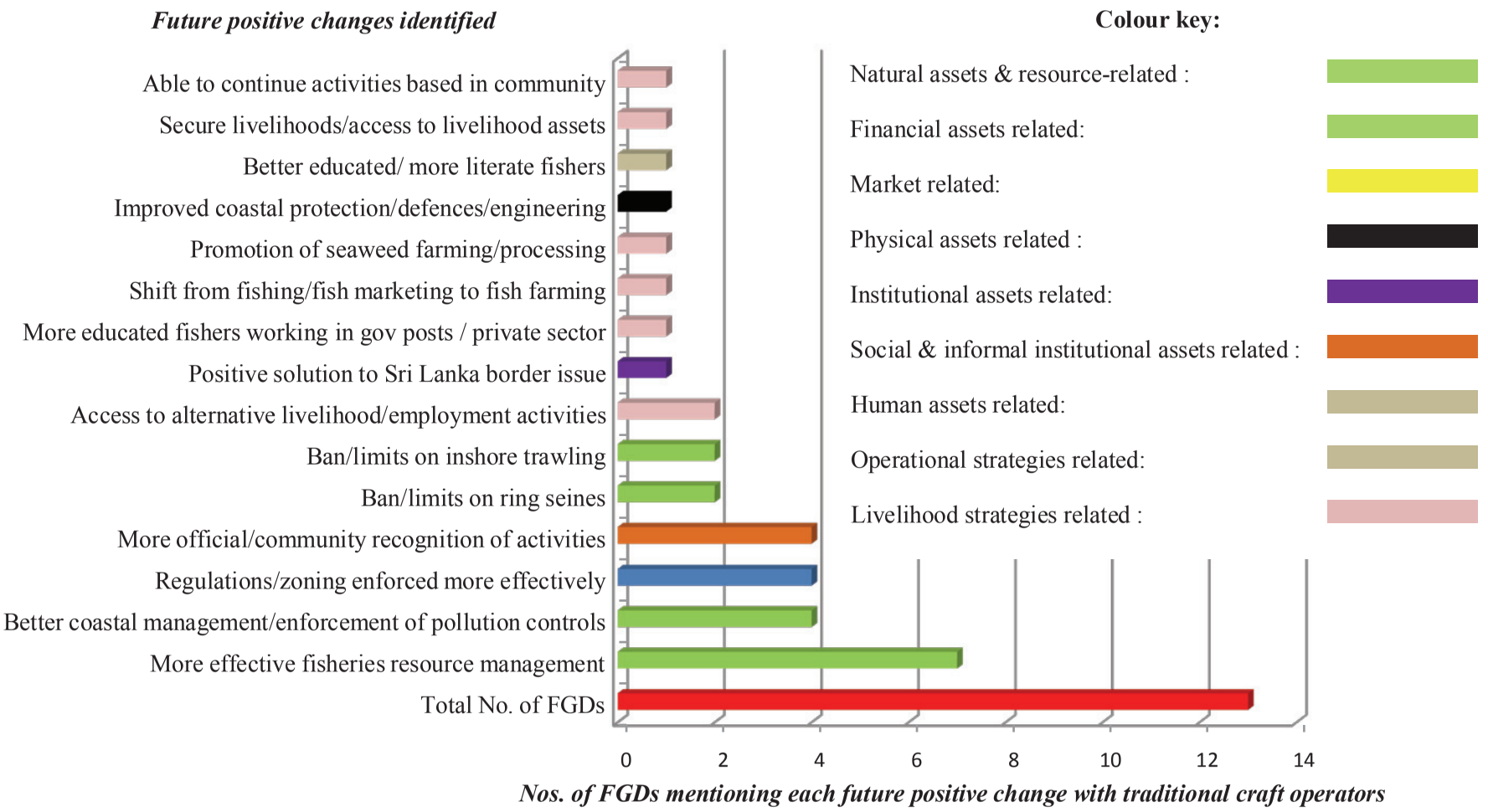


Figure 6.2.4.2 : Individual aspirations for the future identified during FGDs with traditional craft operators

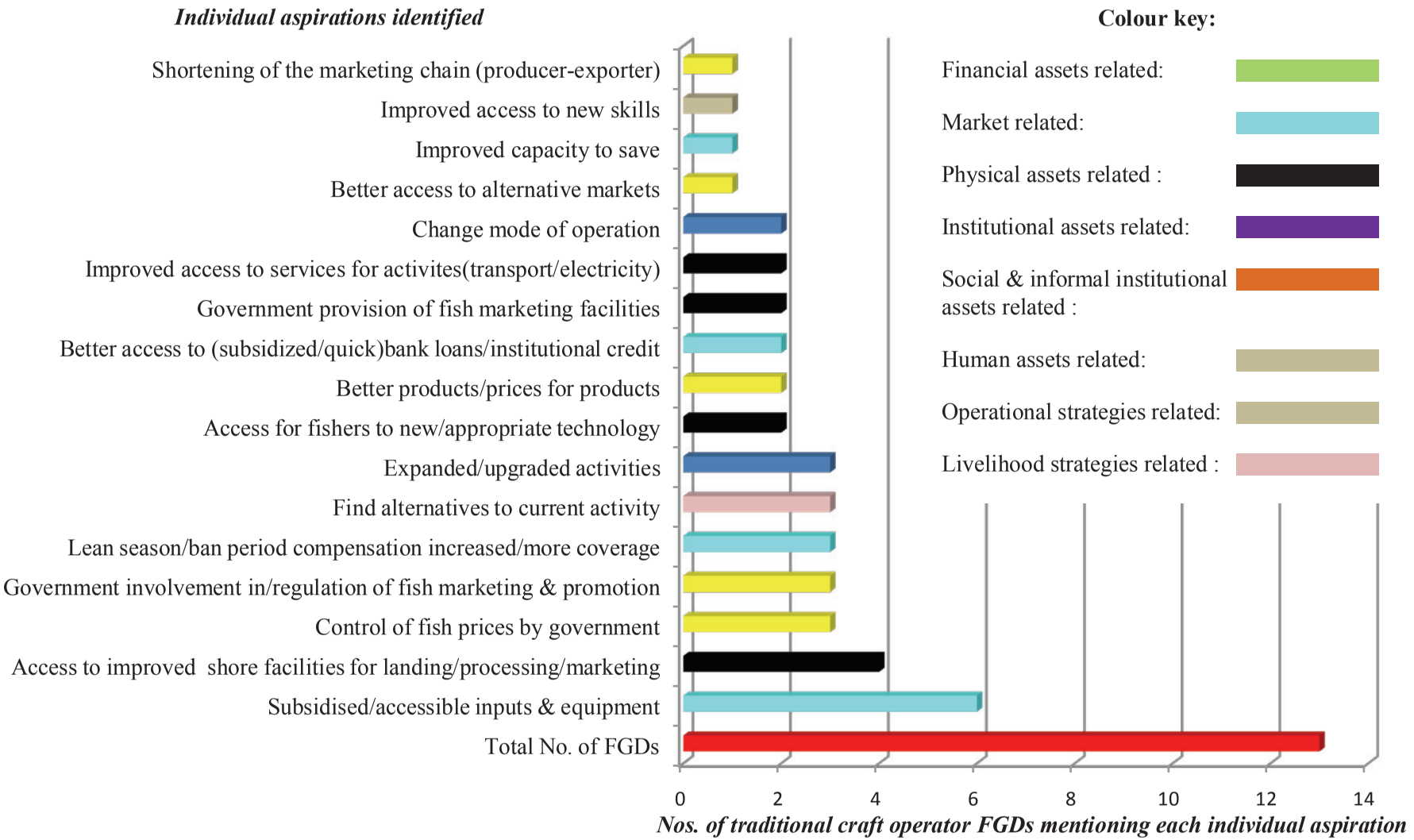
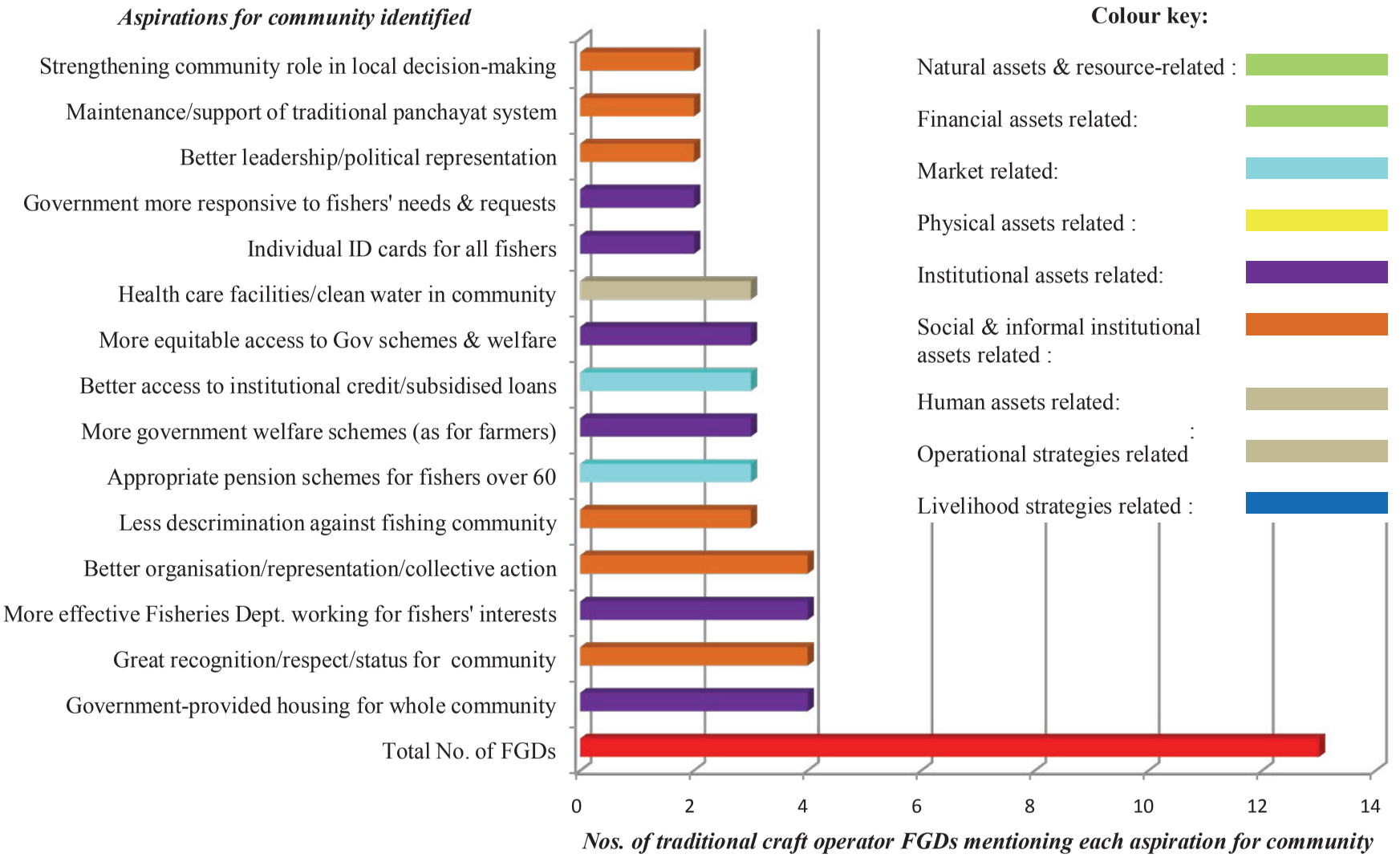


Figure 6.2.4.3 : Aspirations for their community identified during FGDs with traditional craft operators



Annex 6.2.5 Analysis of perceptions of future change and aspirations among fishing crew stakeholder groups

Figure 6.2.5.1 : Future positive changes identified during FGDs with fishing crew(FRP & trawler)

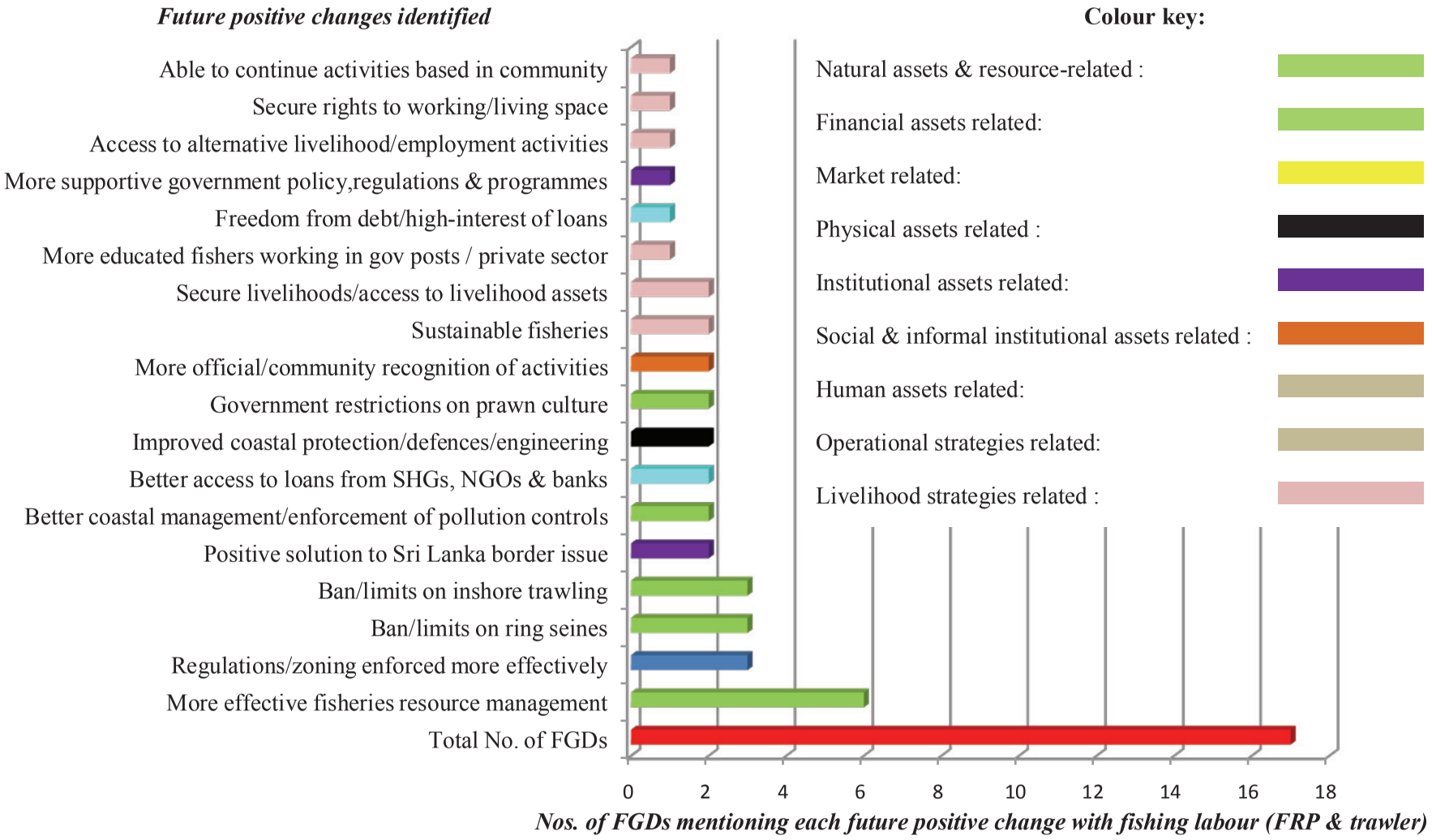


Figure 6.2.5.2 : Individual aspirations for the future identified during FGDs with fishing crew (FRP & trawler)

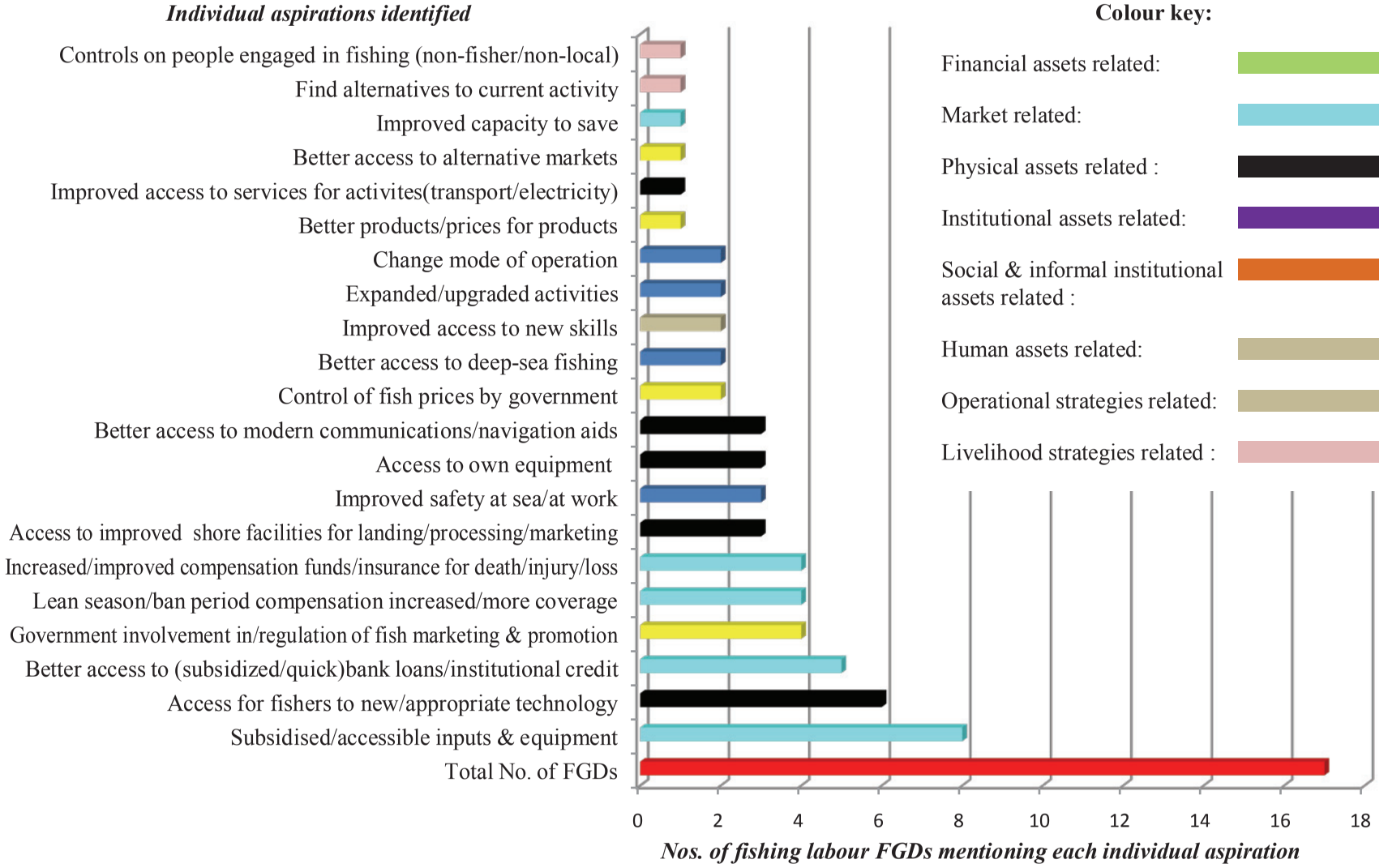
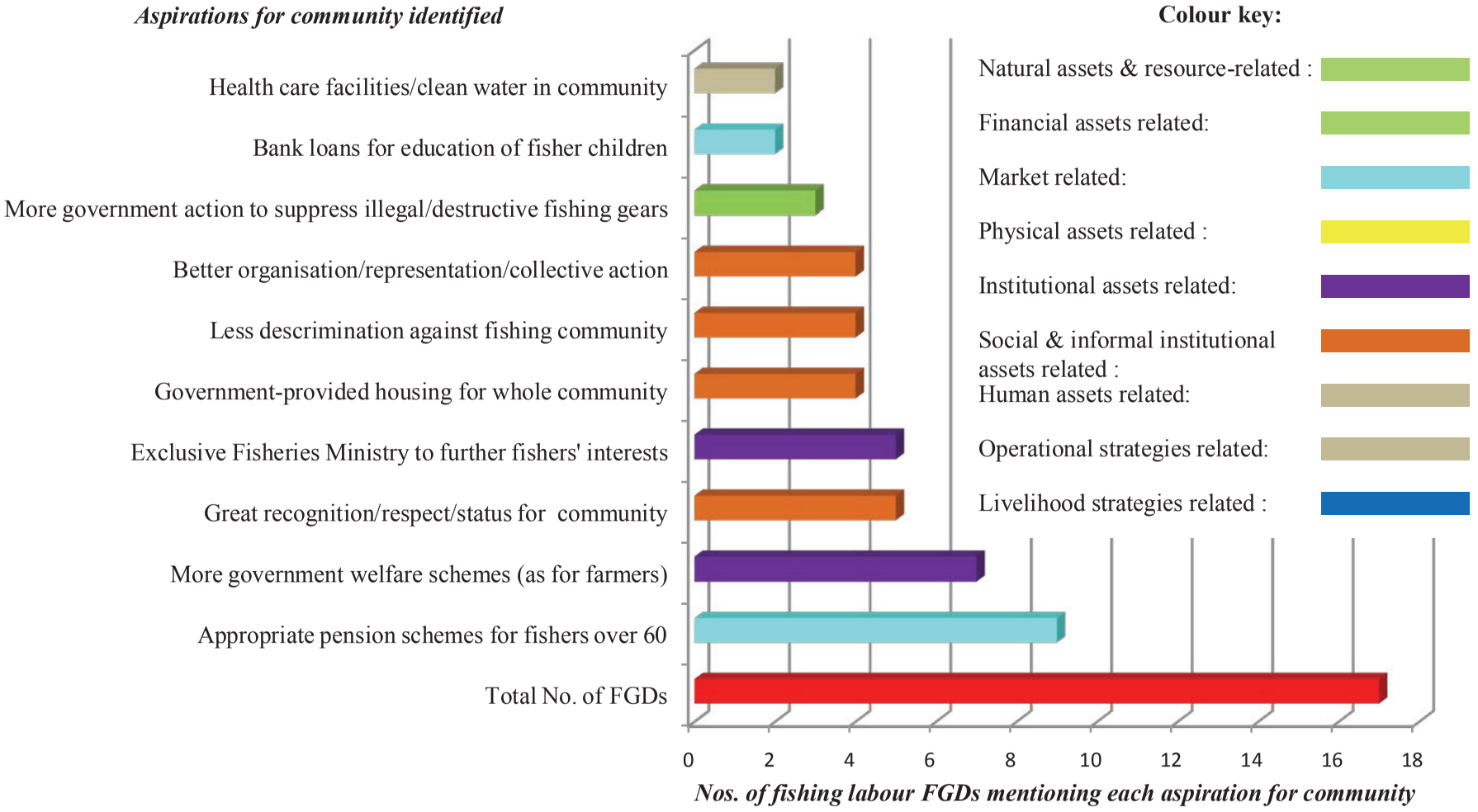


Figure 6.2.5.3 : Aspirations for their community identified during FGDs with fishing crew (FRP & trawler)



Annex 6.3 Analysis of perceptions of future change and aspirations among post-harvest operator stakeholder groups

(Fresh fish vendors, dry fish vendors and processors, fish agents)

Annex 6.3.1 Analysis of perceptions of future change and aspirations among post harvest operator stakeholder groups

Figure 6.3.1.1 : Future positive changes identified during FGDs with post-harvest operator stakeholder groups

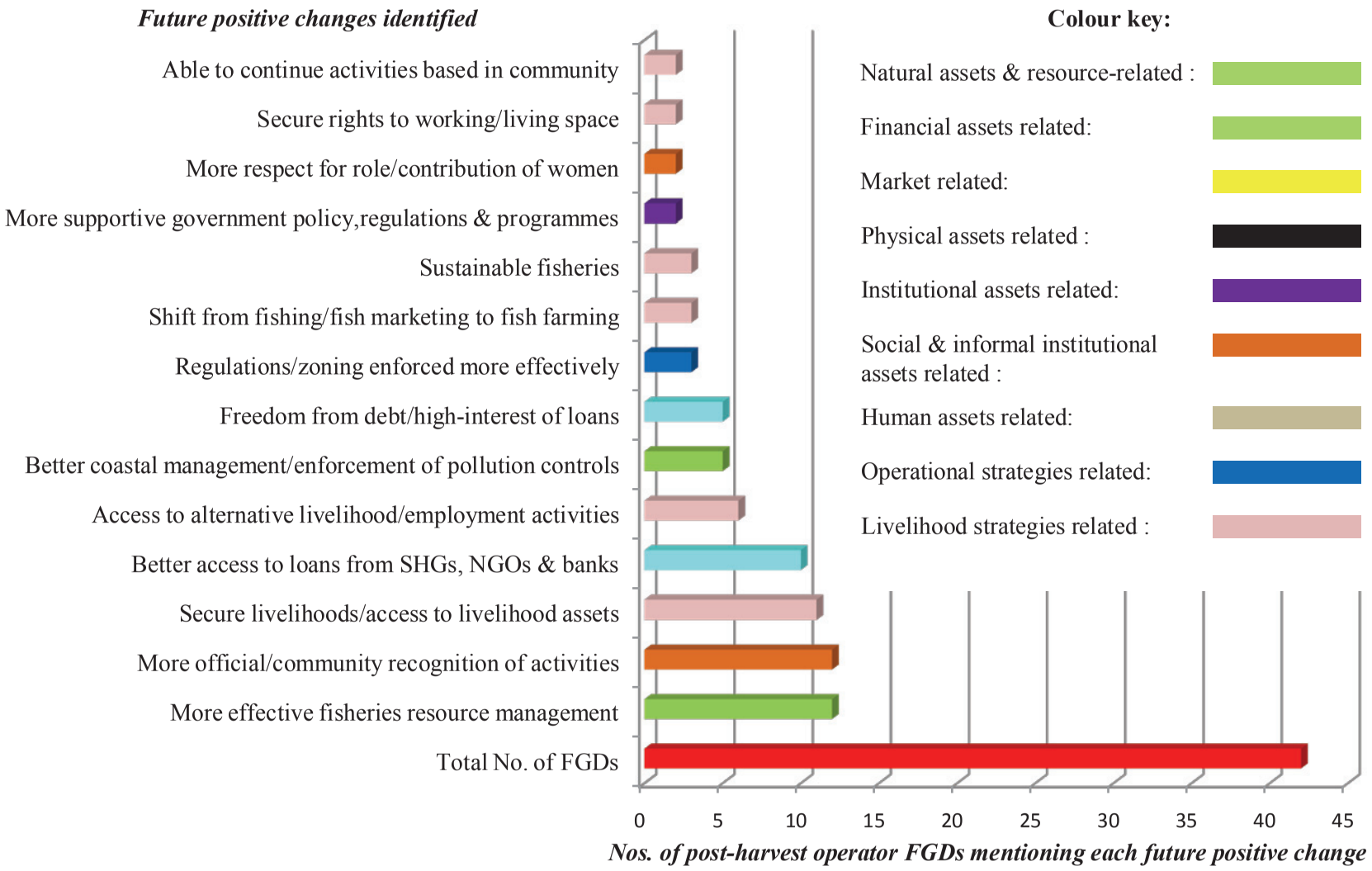


Figure 6.3.1.2 : Individual aspirations for the future identified during FGDs with post-harvest operators

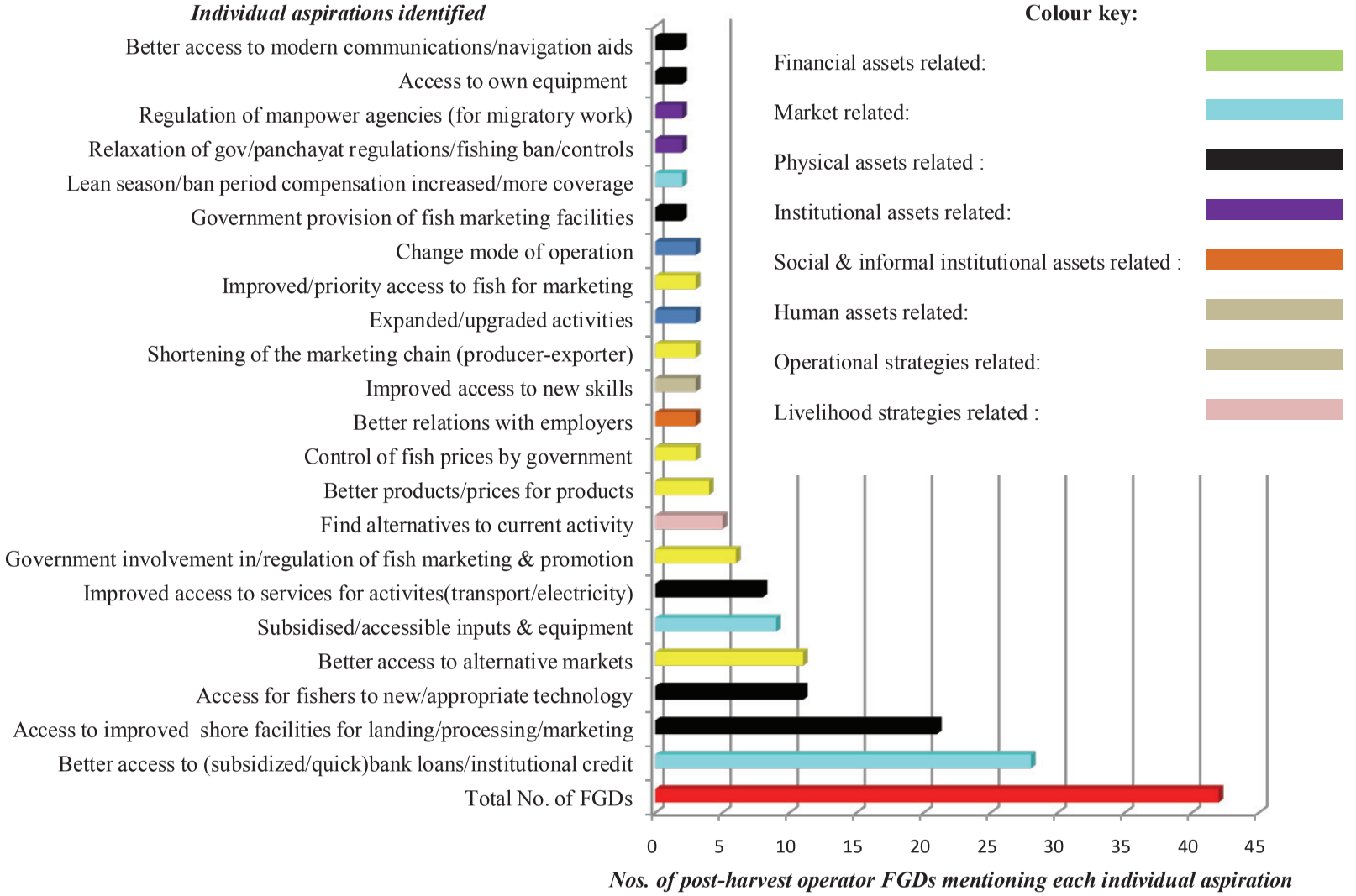


Figure 6.3.1.3 : Aspirations for children identified during FGDs with post-harvest operators

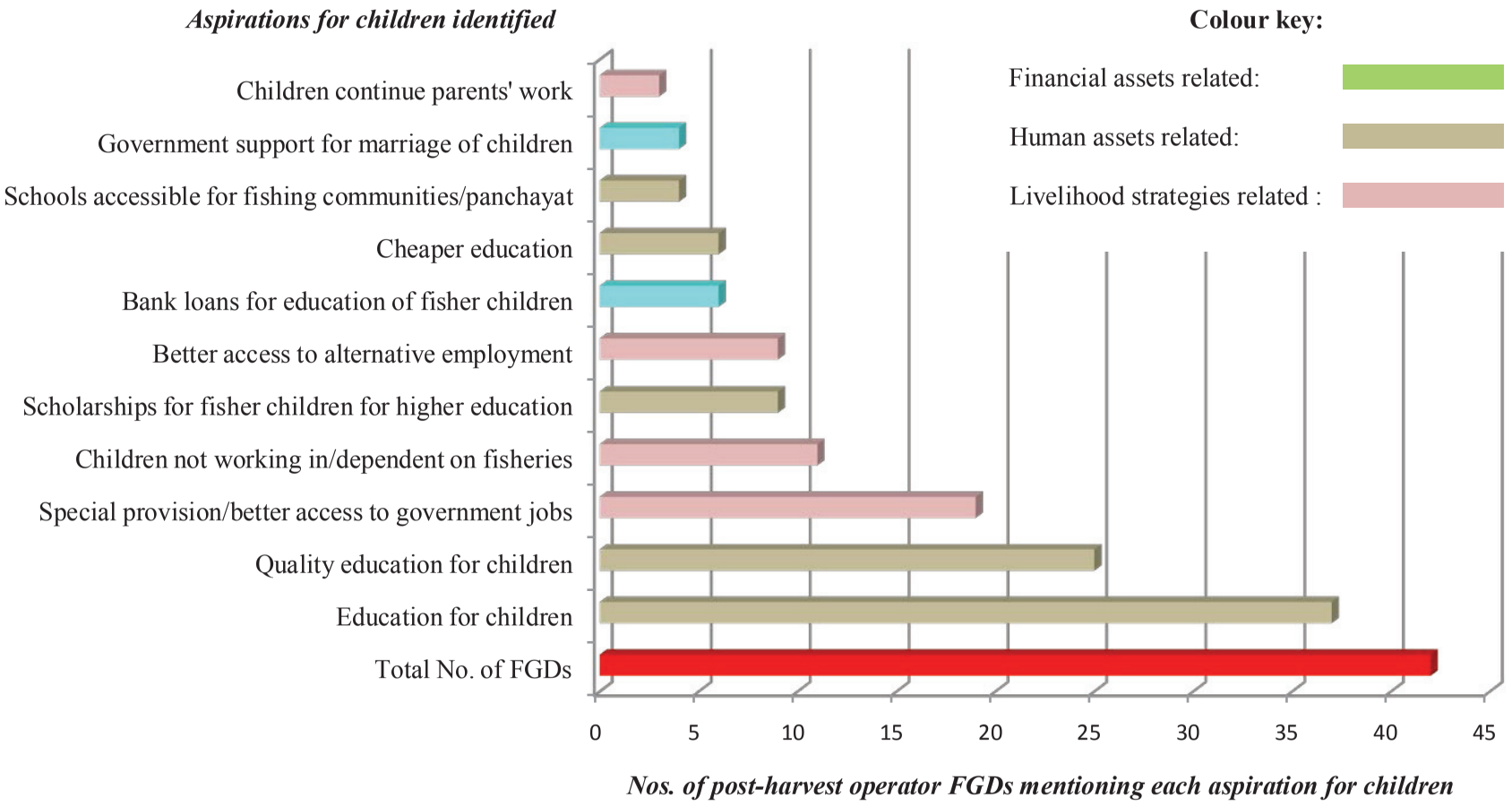
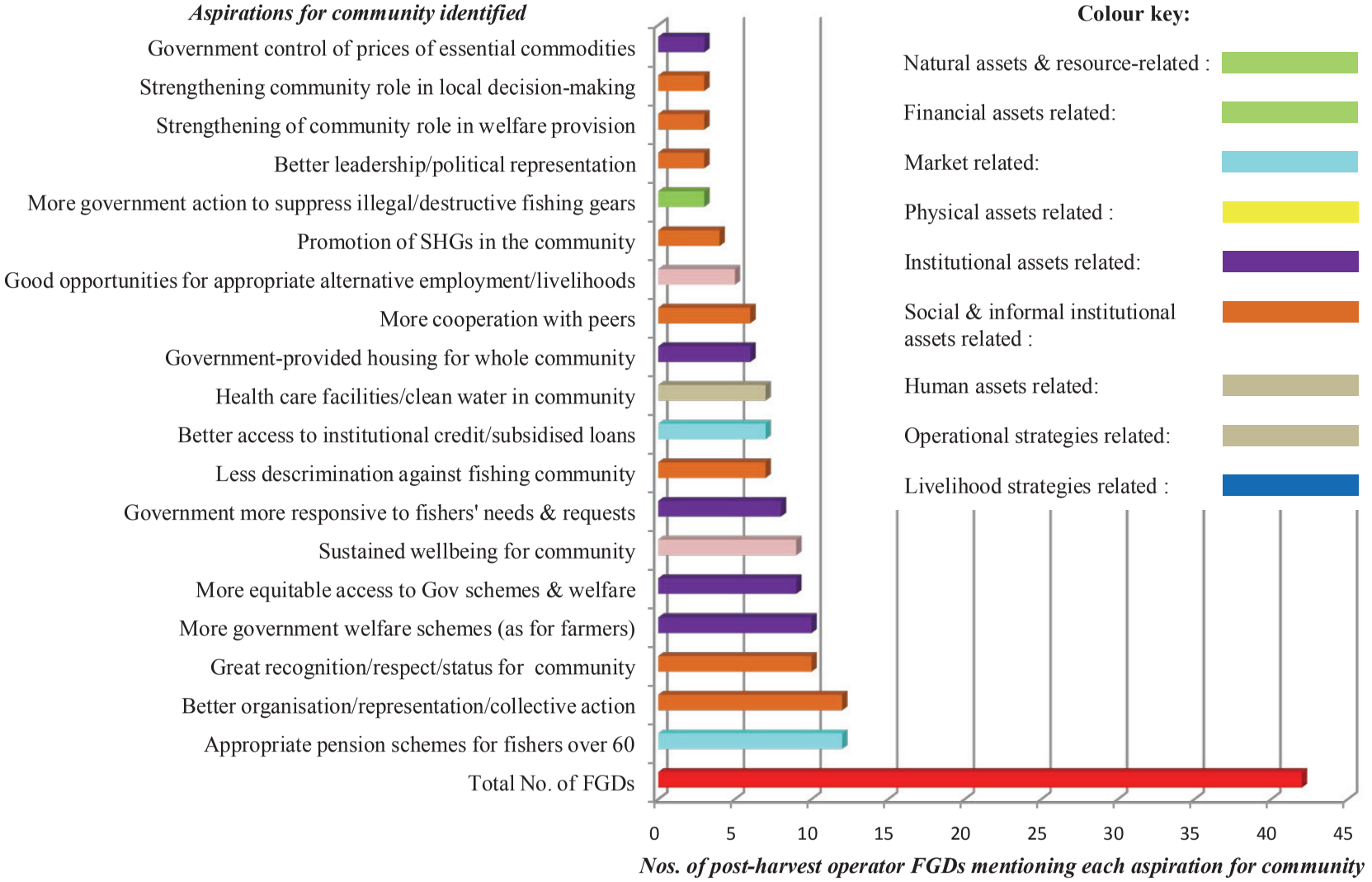


Figure 6.3.1.4 : Aspirations for their community identified during FGDs with post-harvest operators



Annex 6.3.2 Analysis of perceptions of future change and aspirations among fresh fish vendor stakeholder groups

Figure 6.3.2.1 : Future positive changes identified during FGDs with fresh fish vendors

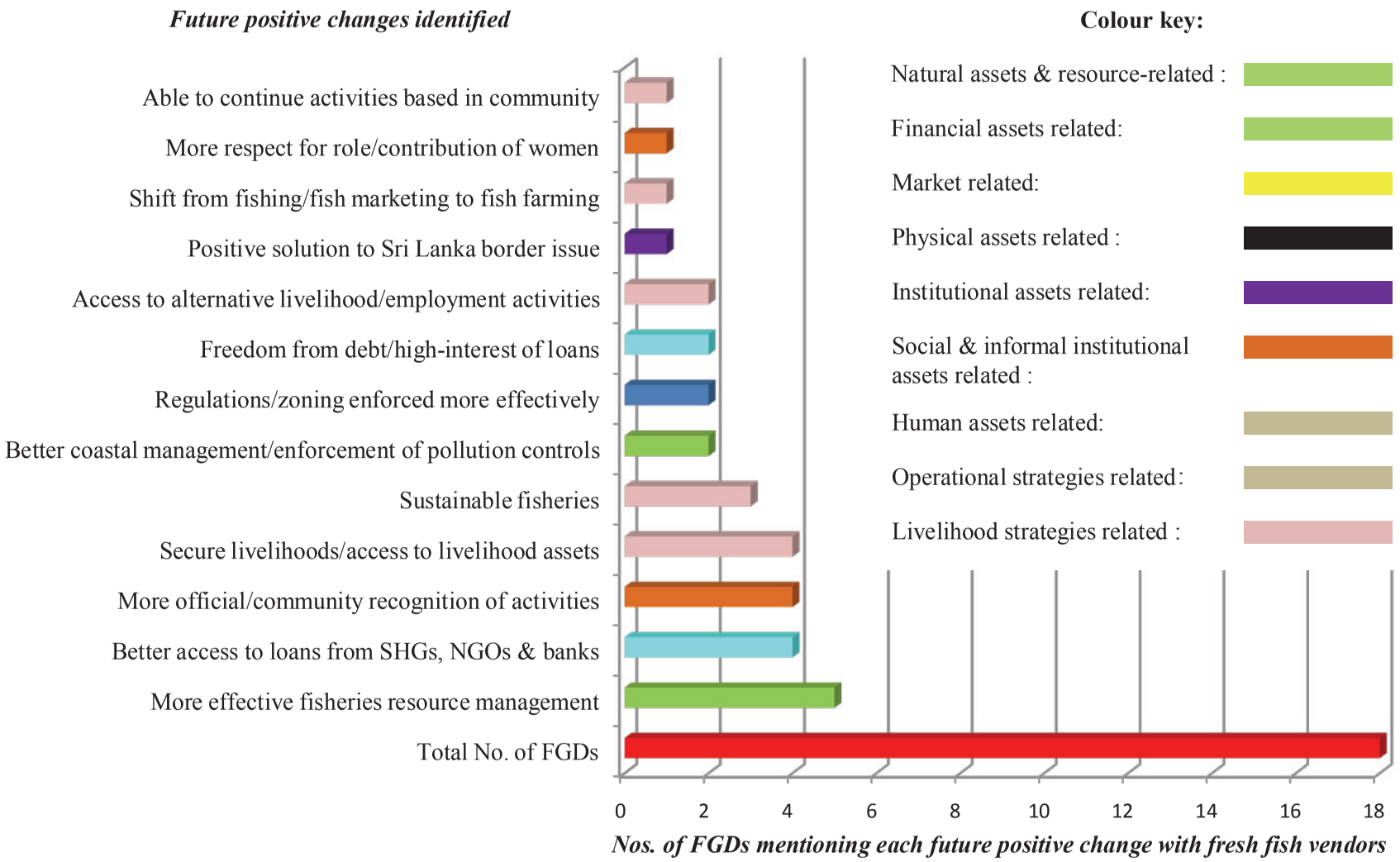


Figure 6.3.2.2 : Individual aspirations for the future identified during FGDs with fresh fish vendors

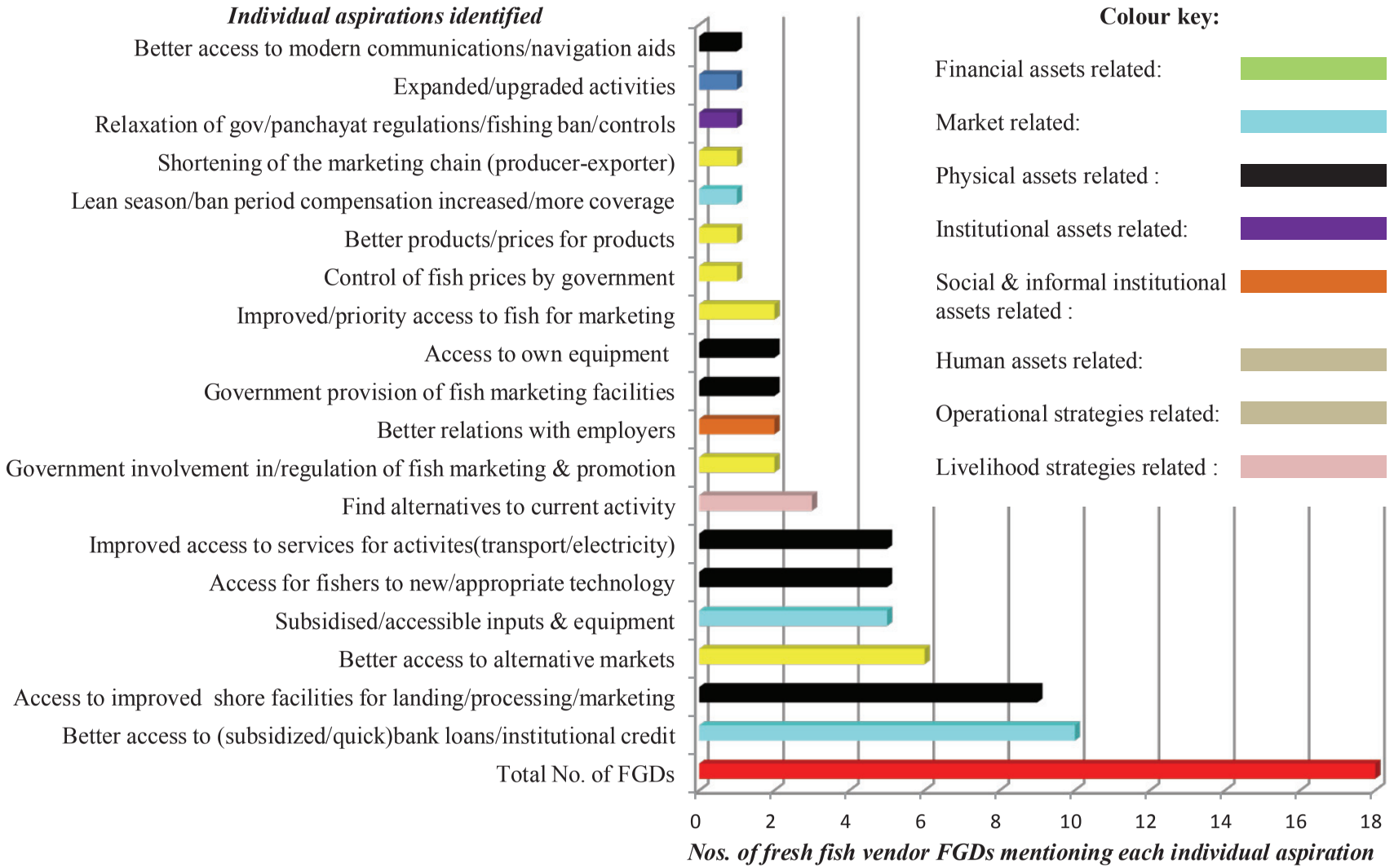
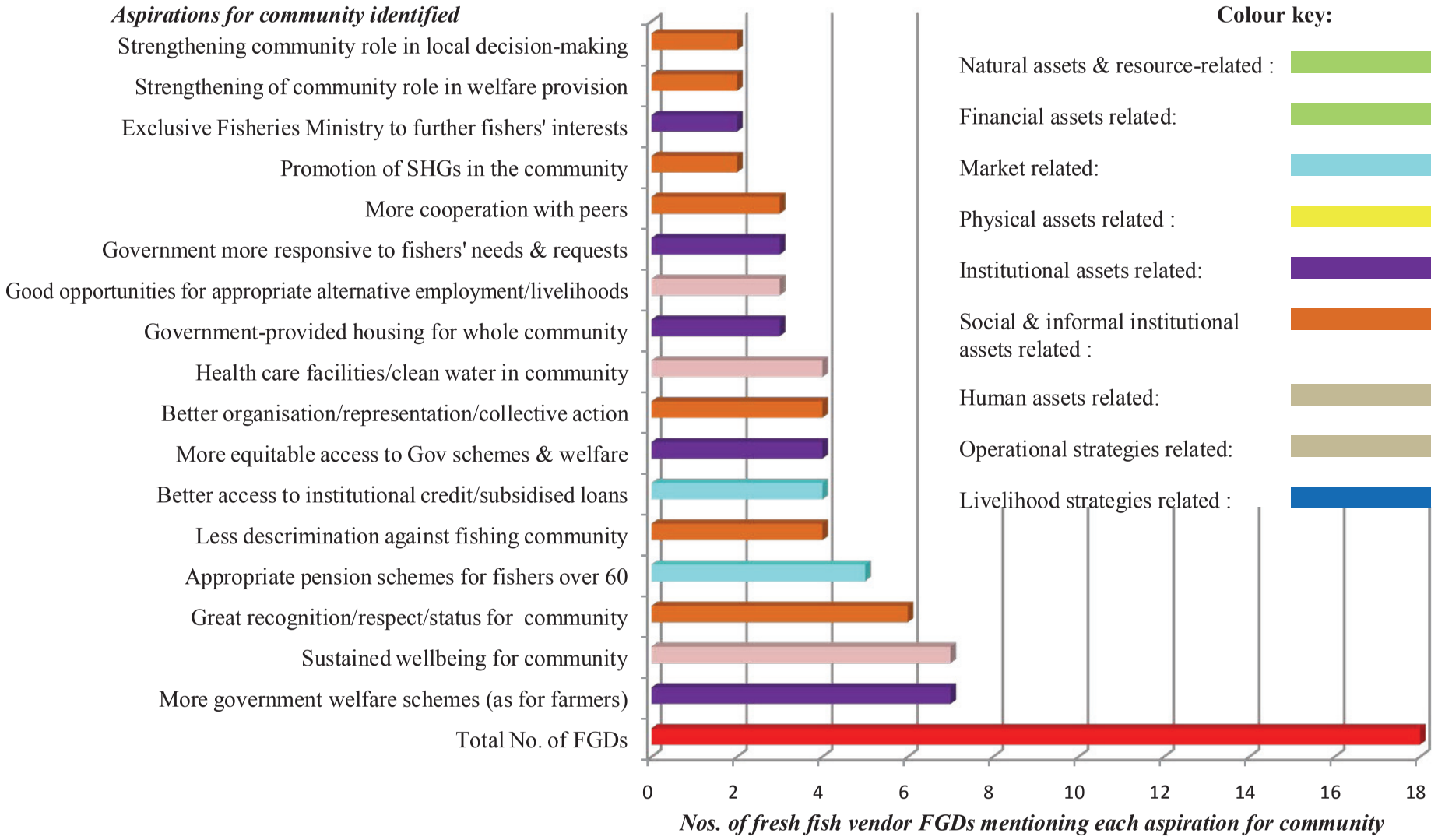


Figure 6.3.2.3 : Aspirations for their community identified during FGDs with fresh fish vendors



Annex 6.3.3 Analysis of perceptions of future change and aspirations among dry fish vendor and processor stakeholder groups

Figure 6.3.3.1 : Future positive changes identified during FGDs with dry fish vendors & processors

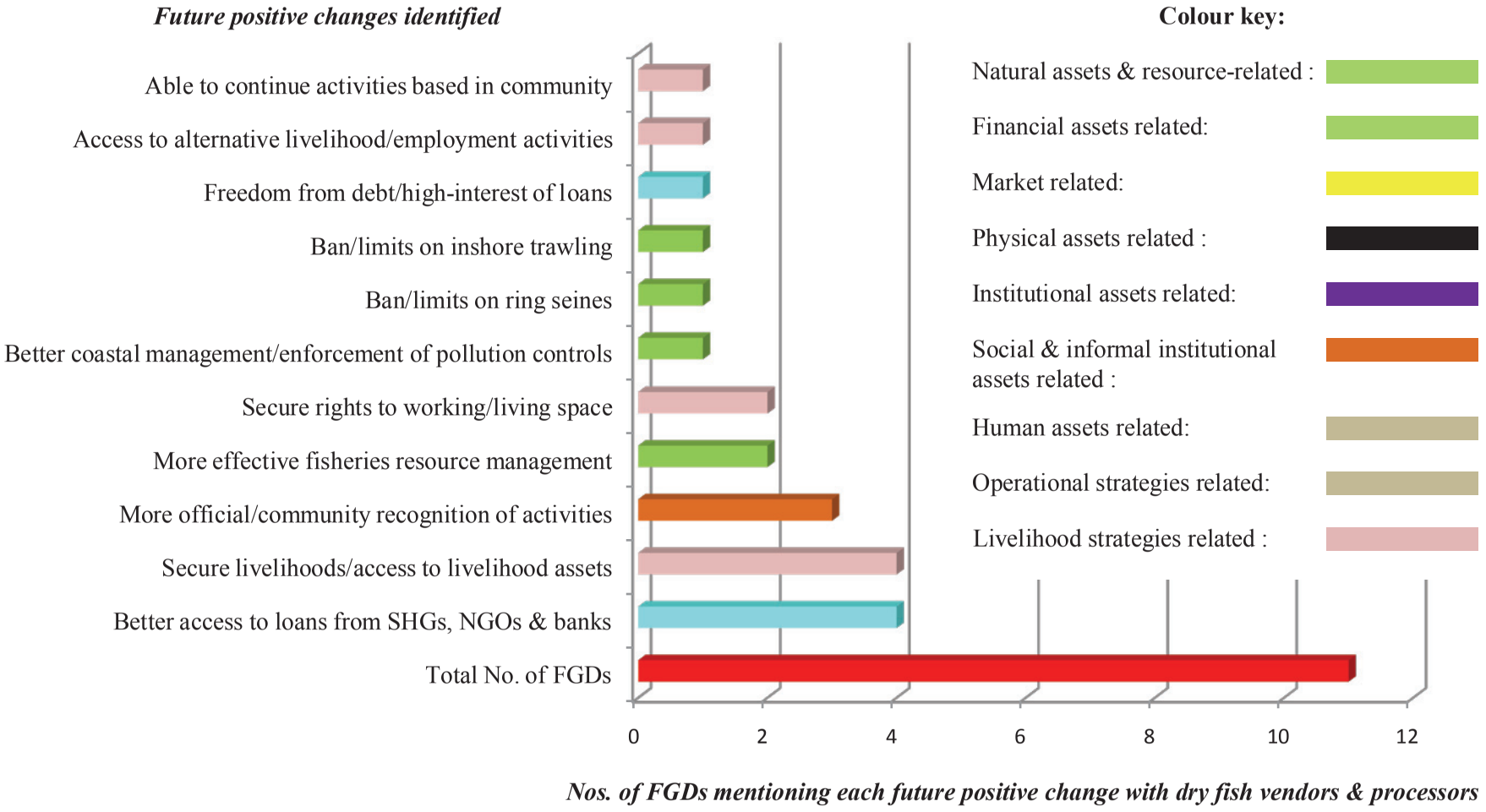


Figure 6.3.3.2 : Individual aspirations for the future identified during FGDs with dry fish vendors & processors

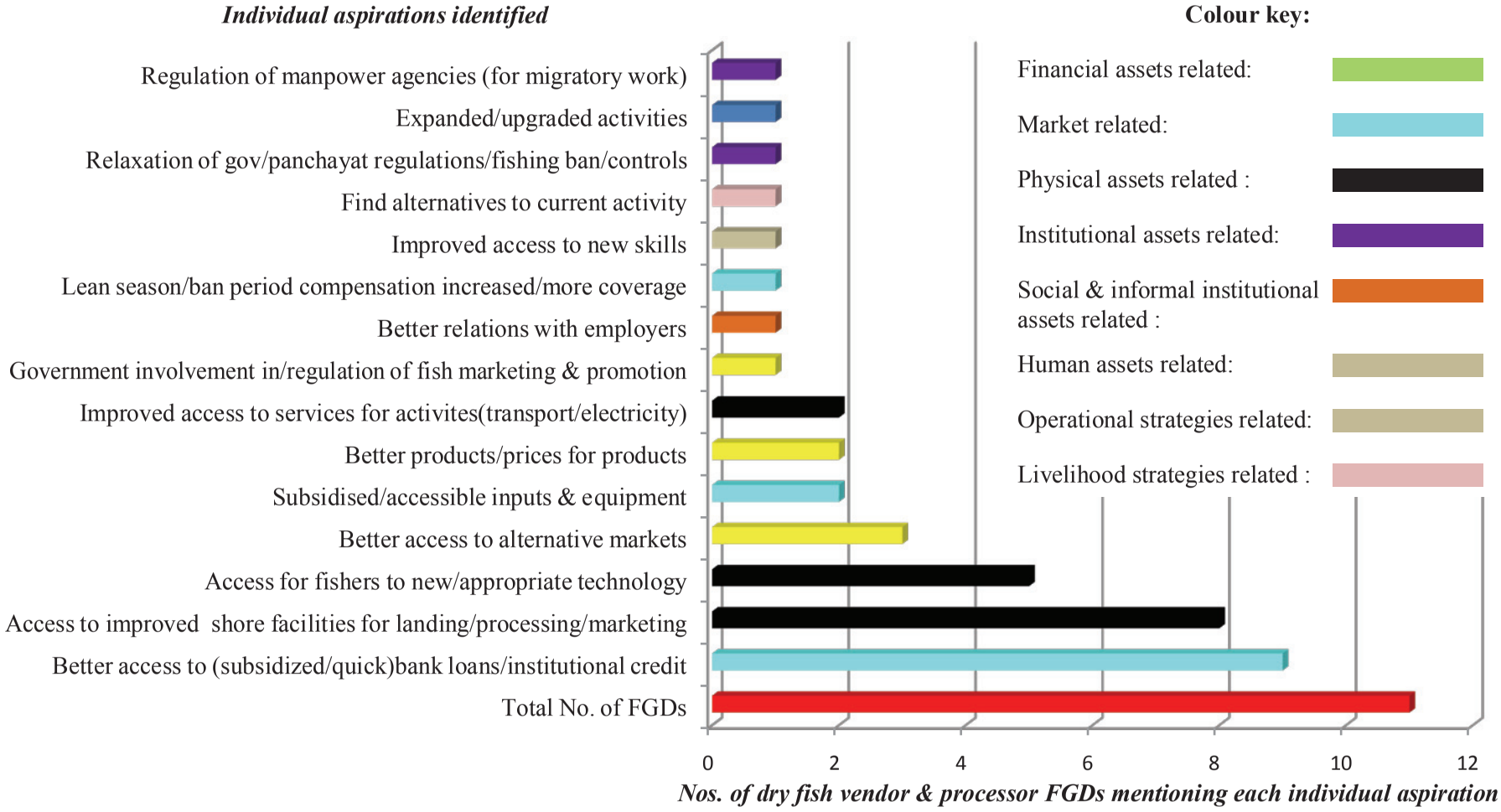
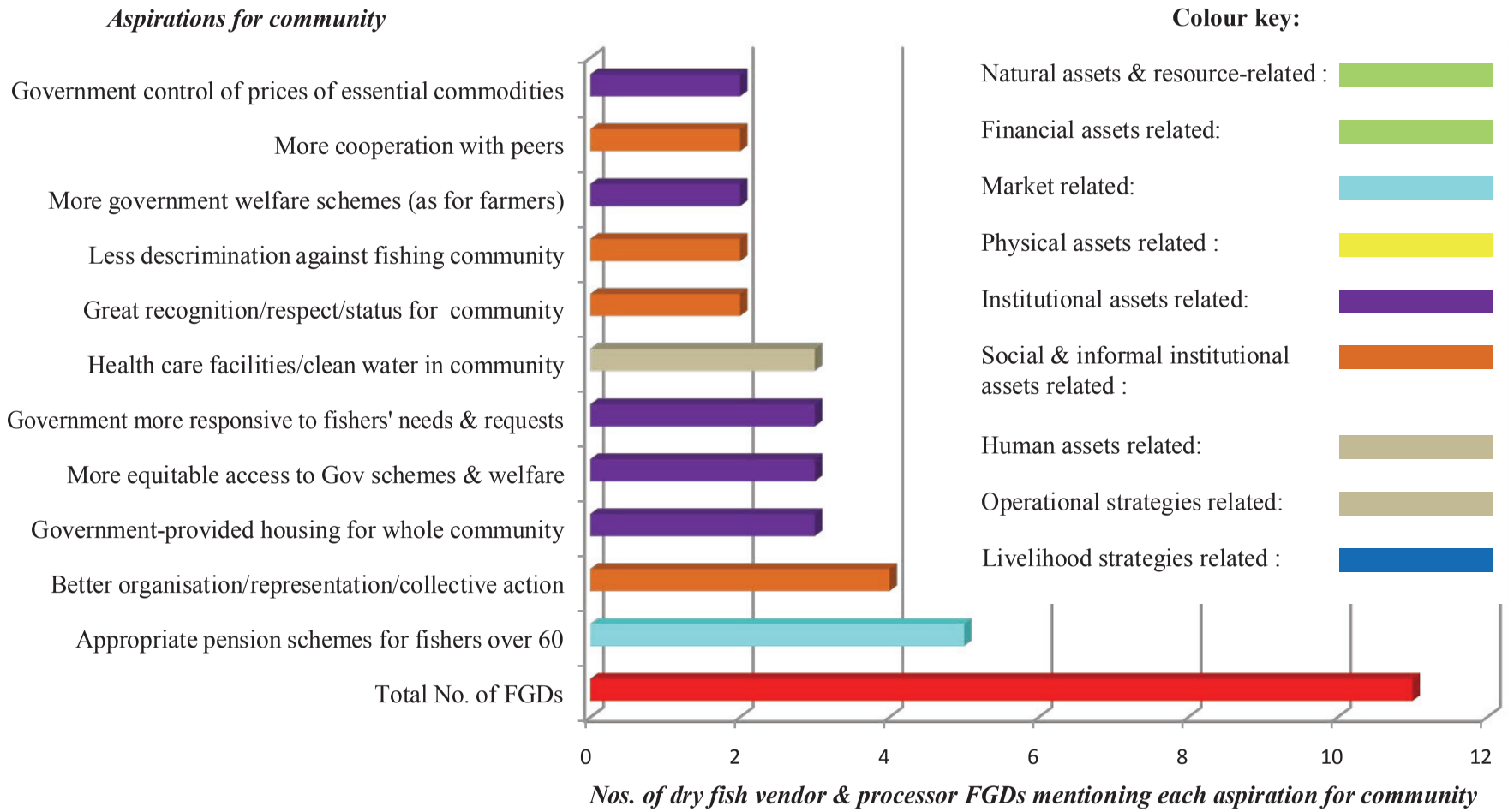


Figure 6.3.3.3 : Aspirations for their community identified during FGDs with dry fish vendors & processors



Annex 6.3.4 Analysis of perceptions of future change and aspirations among fish agent stakeholder groups

Figure 6.3.4.1 : Future positive changes identified during FGDs with fish agents

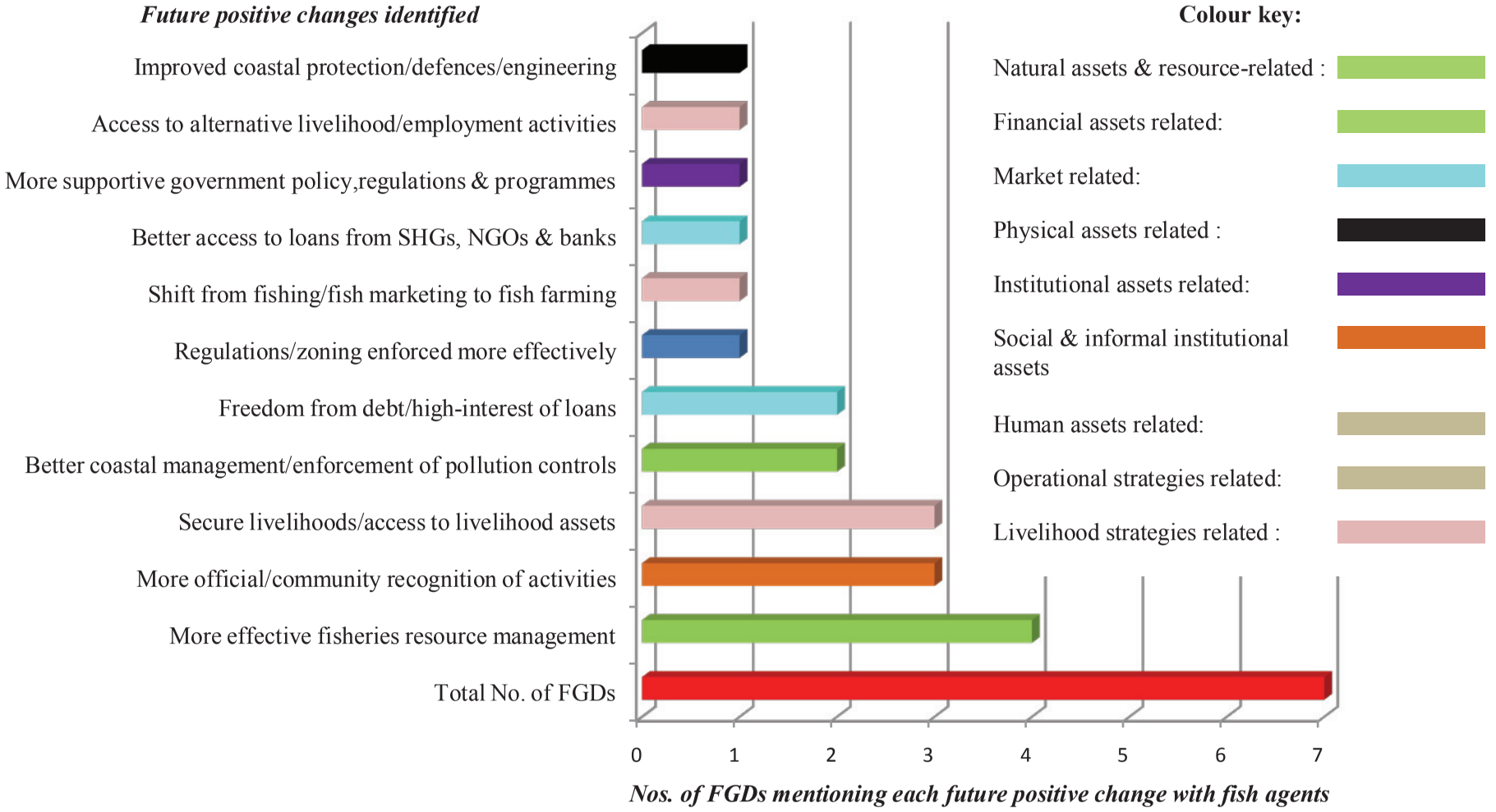


Figure 6.3.4.2 : Individual aspirations for the future identified during FGDs with fish agents

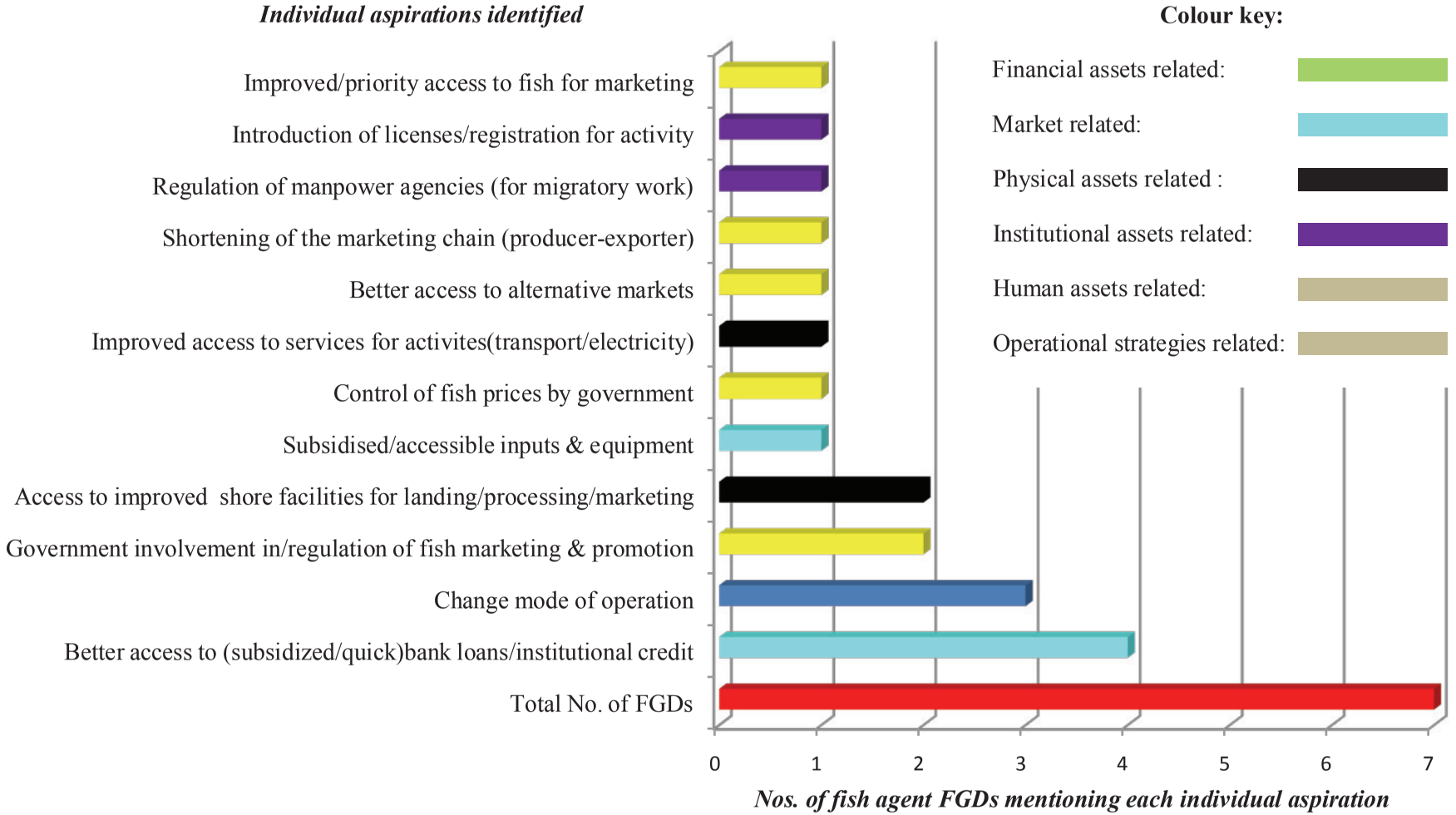
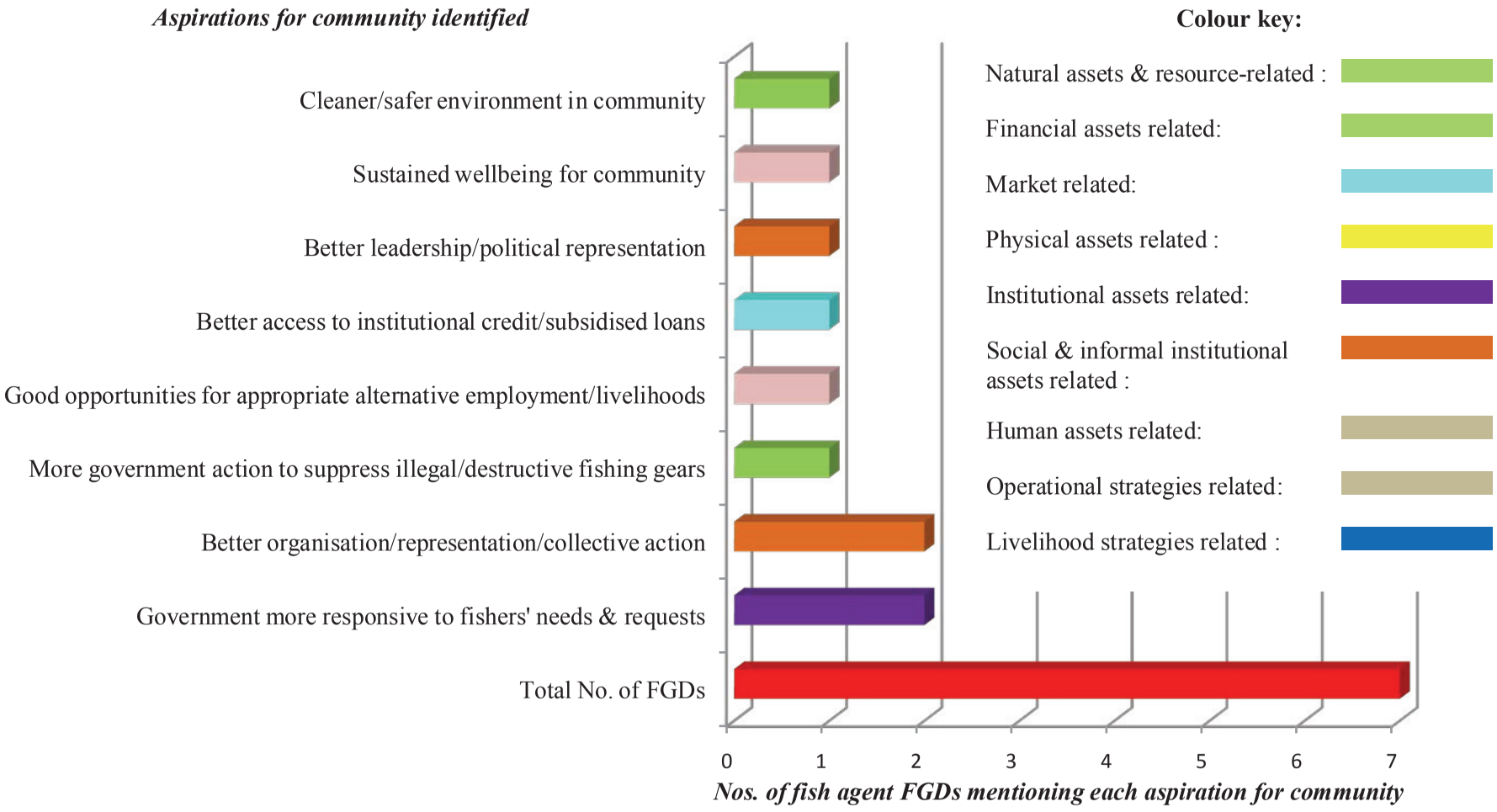


Figure 6.3.4.3 : Aspirations for their community identified during FGDs with fish agents



Annex 6.4 Analysis of perceptions of future change and aspirations among service provider stakeholder groups

(Mechanics, fuel suppliers, ice manufacturers and suppliers, net menders)

Figure 6.4.1 : Future positive changes identified during FGDs with service providers

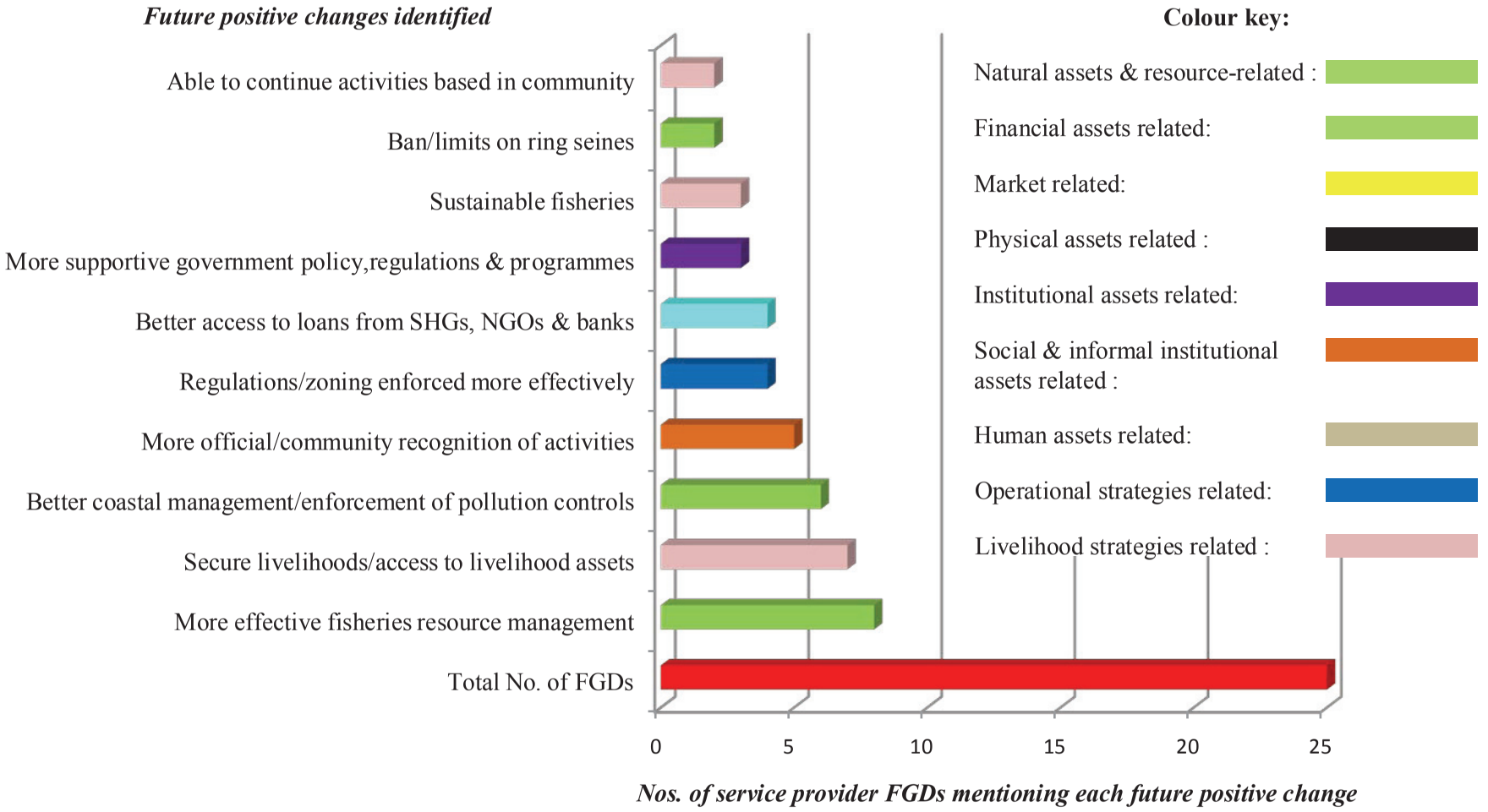


Figure 6.4.2 : Individual aspirations for the future identified during FGDs with service providers

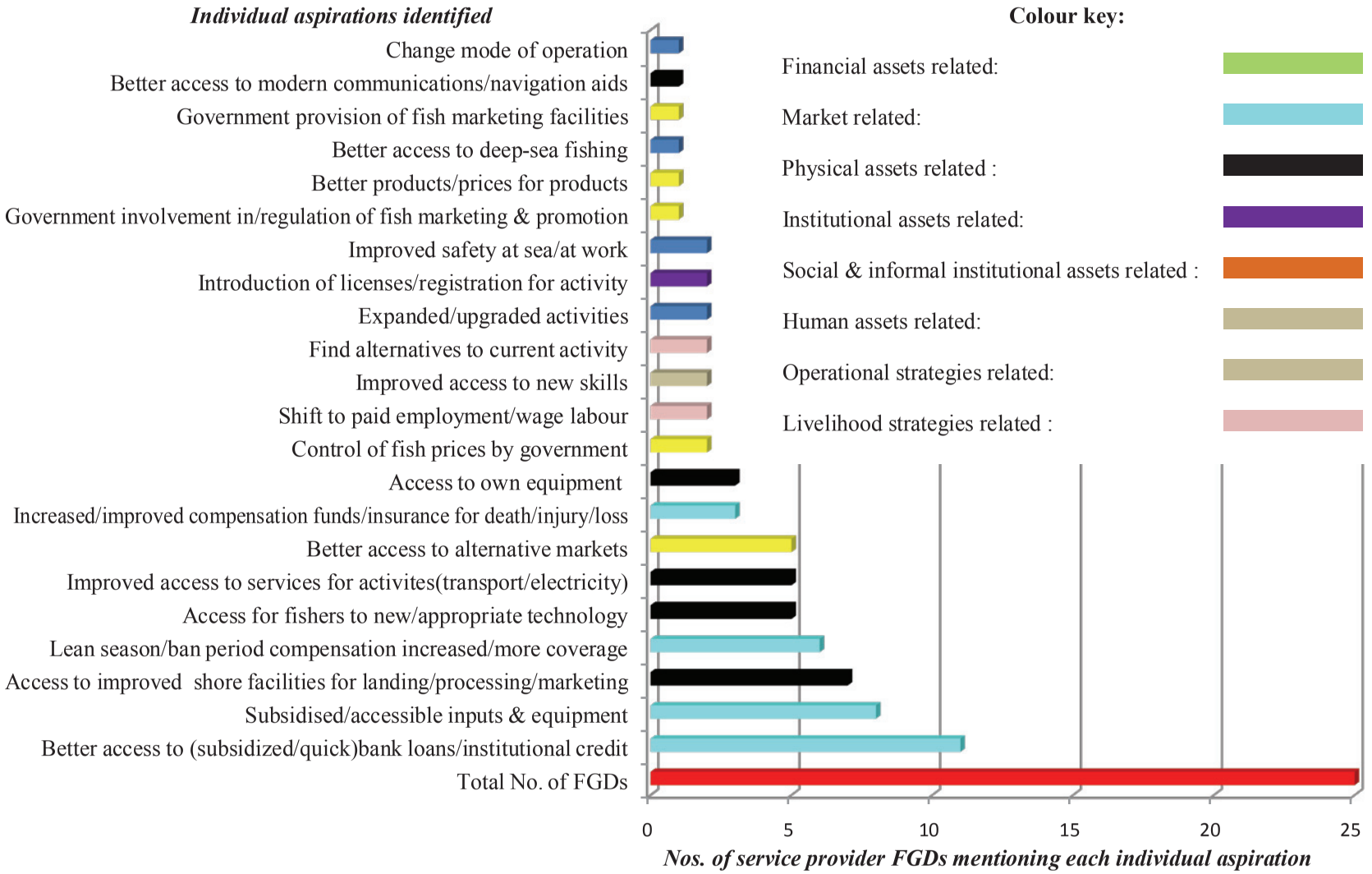


Figure 6.4.3 : Aspirations for children identified during FGDs with service providers

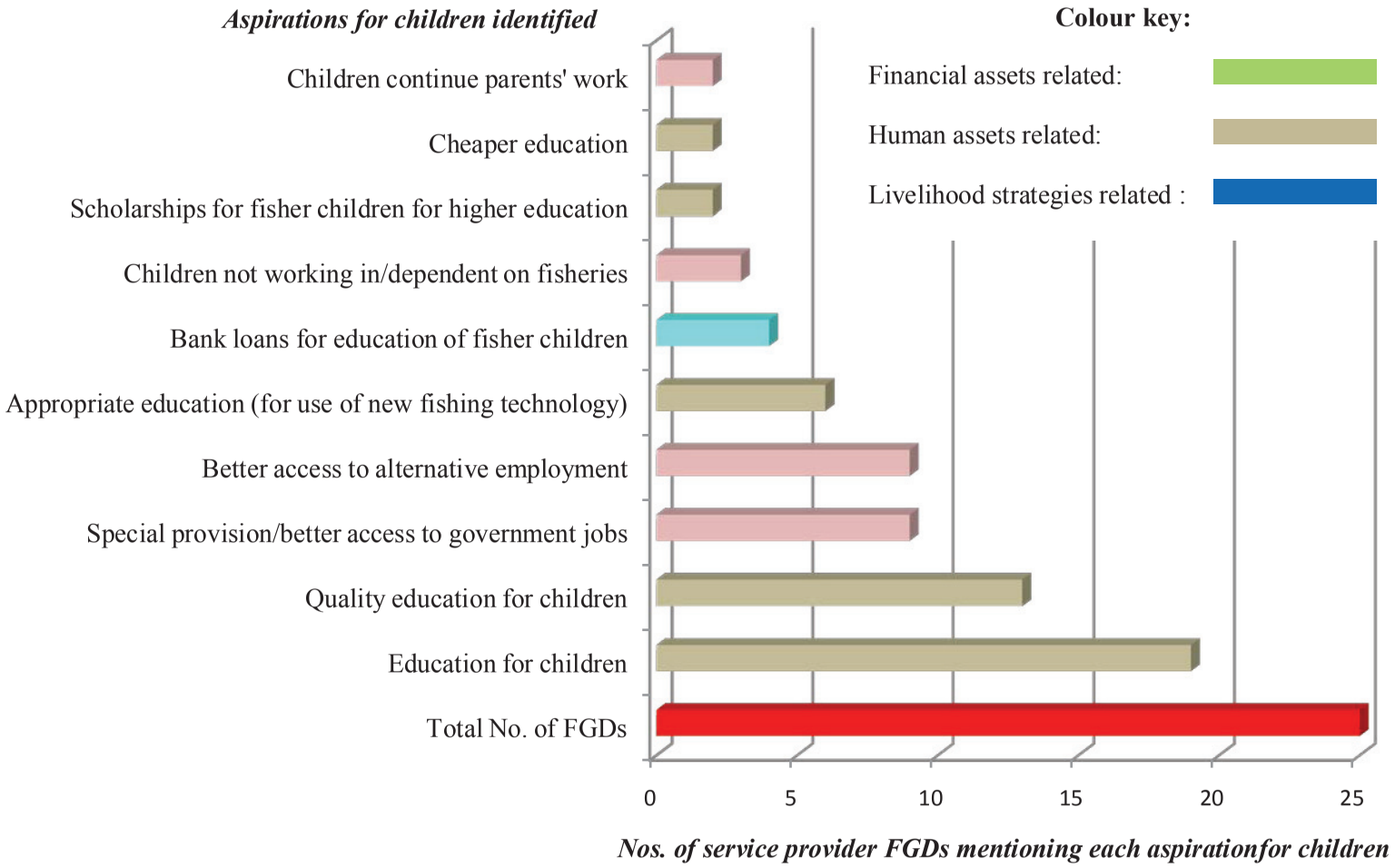
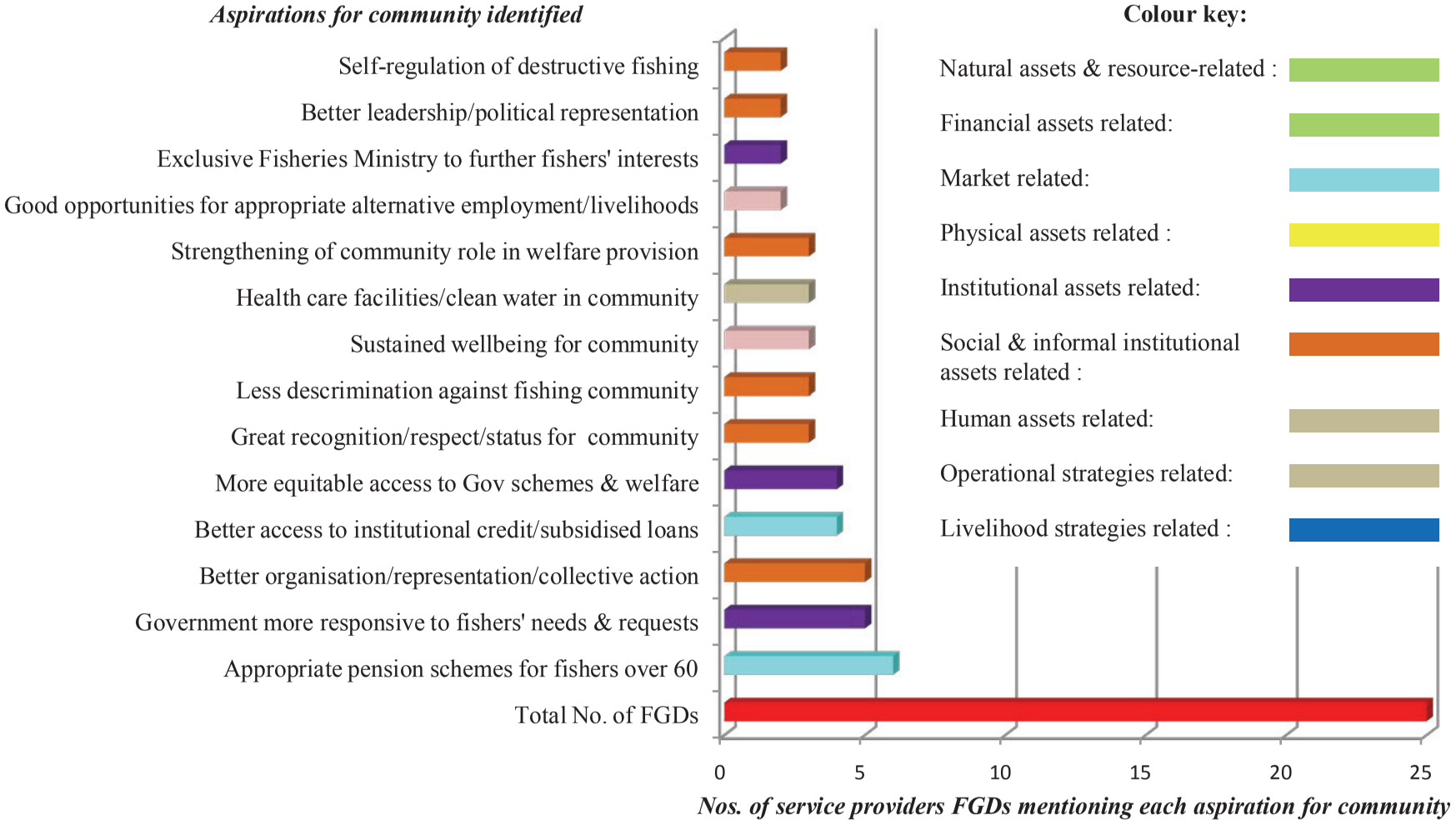


Figure 6.4.4 : Aspirations for their community identified during FGDs with service providers



Annex 6.5 Analysis of perceptions of future change and aspirations among all female stakeholder groups

Figure 6.5.1 : Future positive changes identified during FGDs with all-female groups

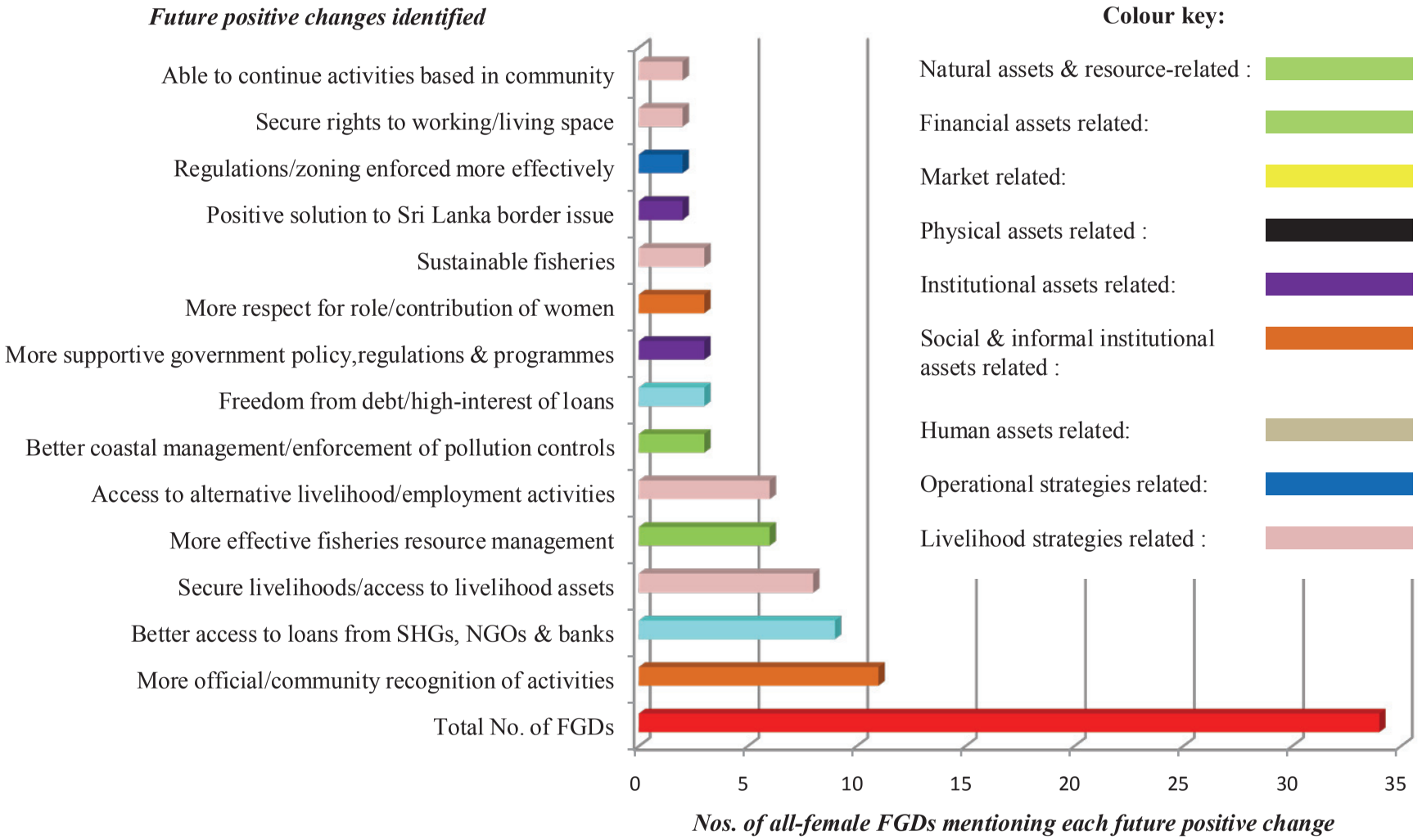


Figure 6.5.2 : Individual aspirations for the future identified during FGDs with all-female groups

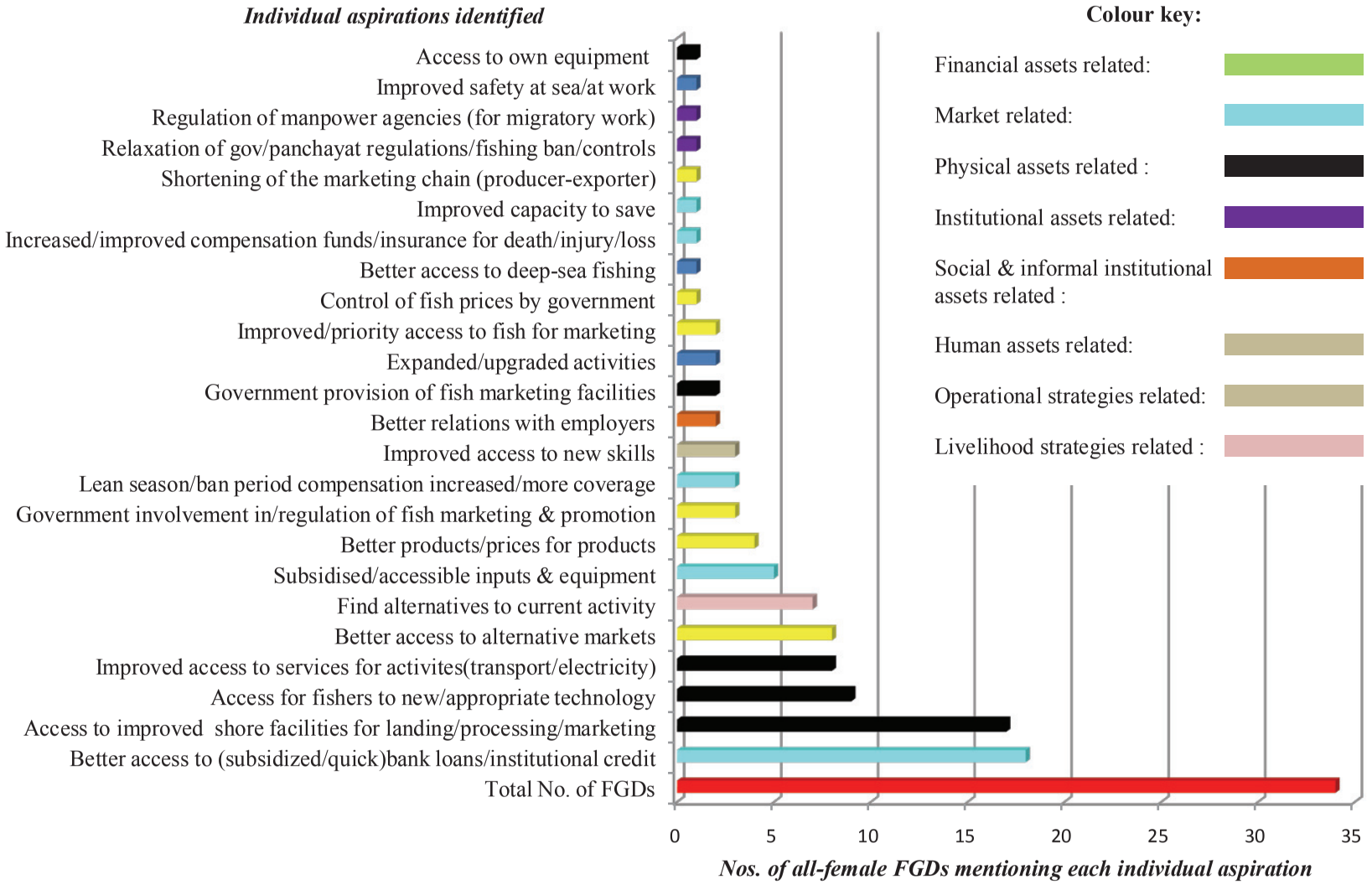


Figure 6.5.3 : Aspirations for children identified during FGDs with all-female groups

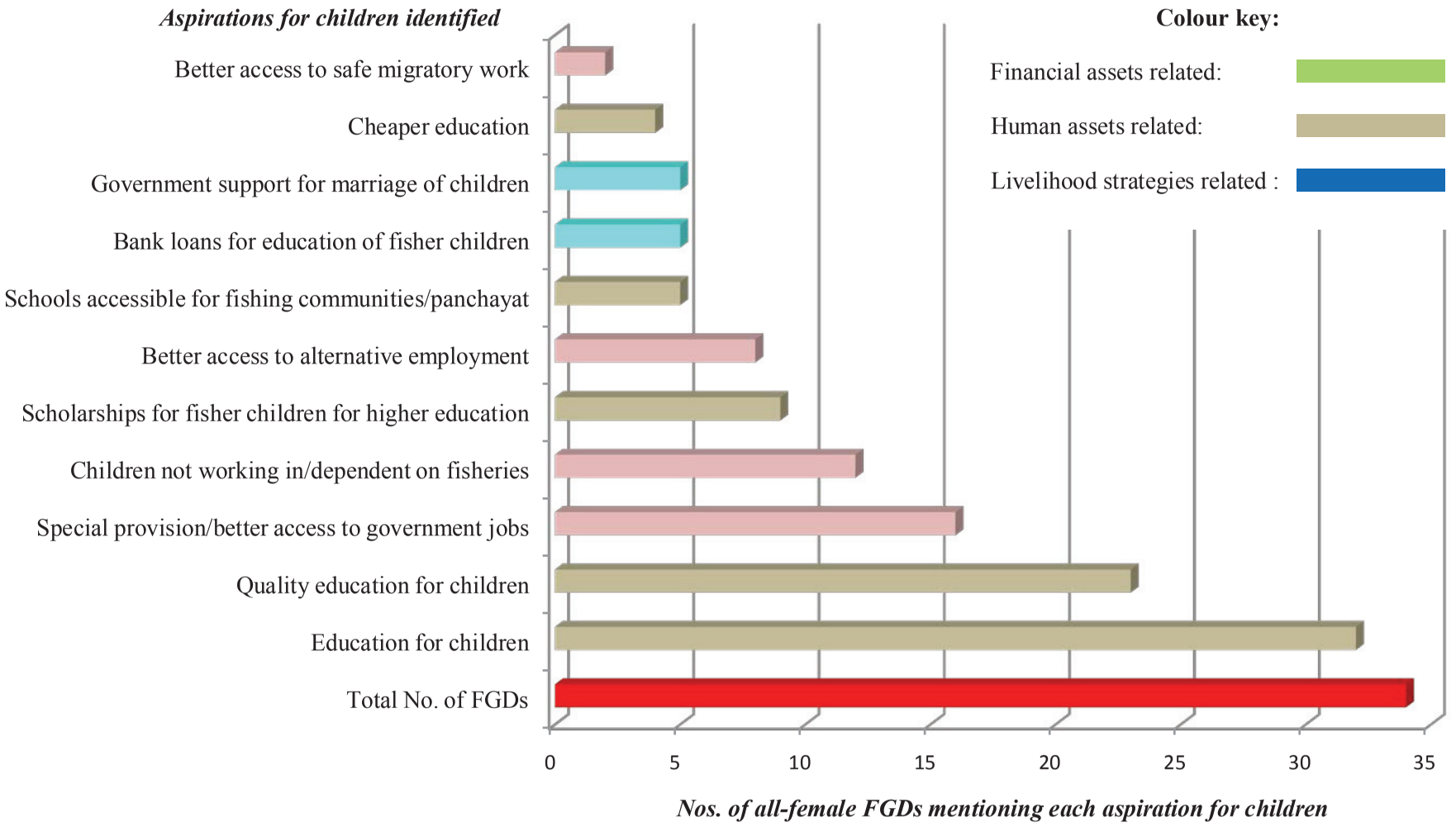
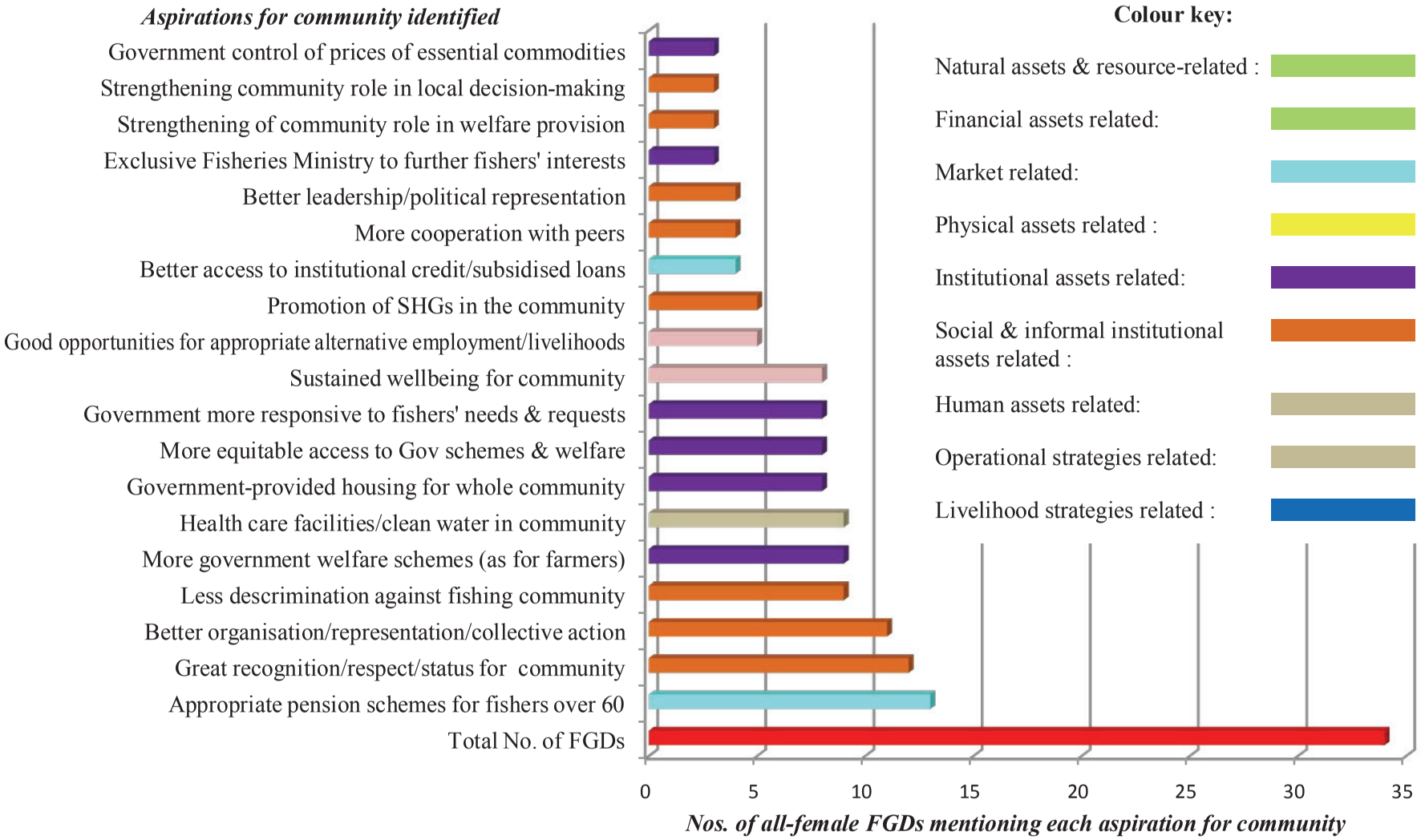


Figure 6.5.4 : Aspirations for their community identified during FGDs with all-female groups



Annex 7

FIMSUL Stakeholder and Livelihoods Analysis Process

Area-Based Analysis of Stakeholders' Perceptions of Future Change and their Aspirations for the Future

Annex 7.1 Analysis of perceptions of future change and aspirations in Tiruvallur and Chennai Districts, Tamil Nadu

Figure 7.1.1 : Future positive changes identified during FGDs in Tiruvallur & Chennai Districts

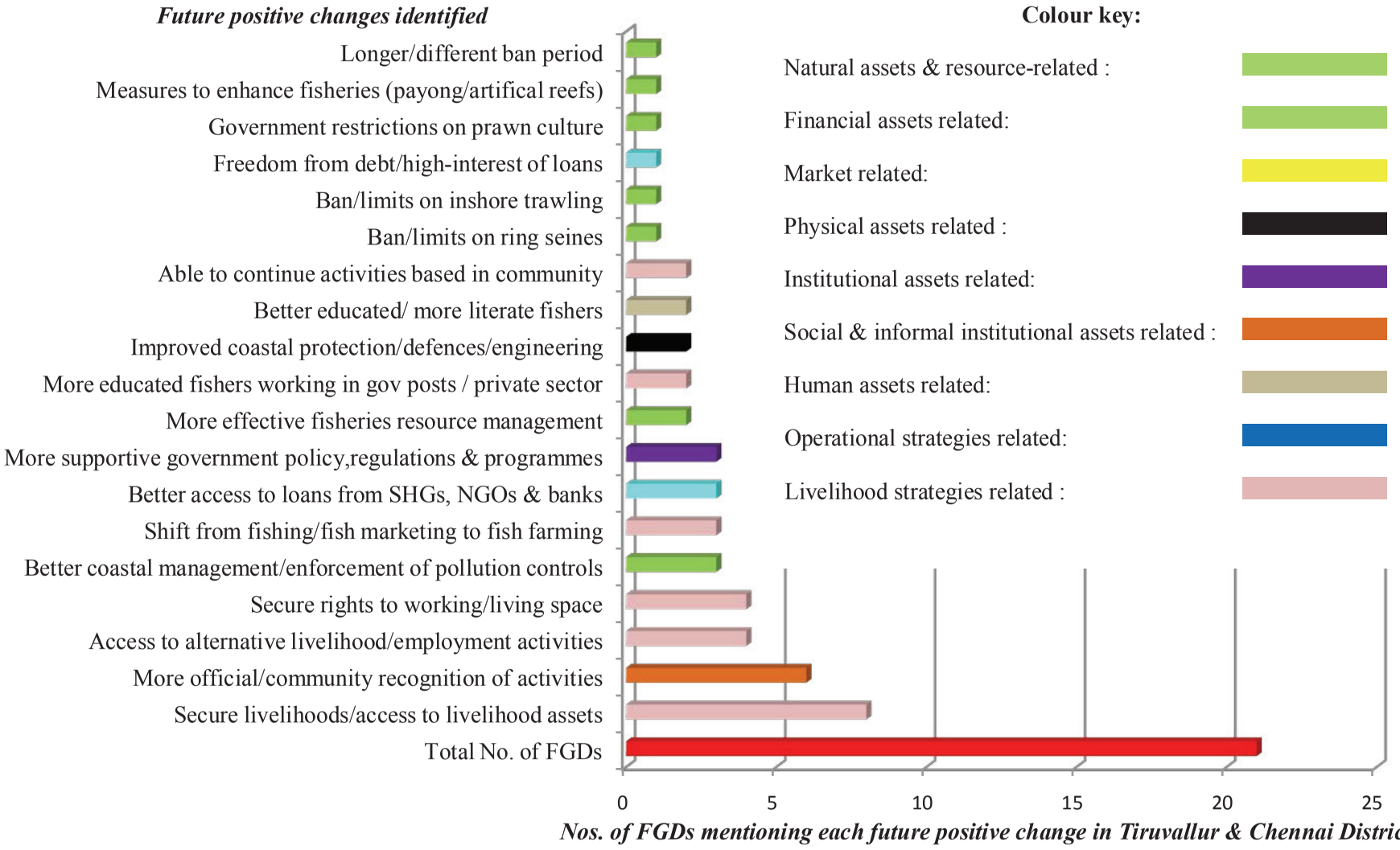


Figure 7.1.2 : Individual aspirations for the future identified during FGDs in Tiruvallur & Chennai Districts

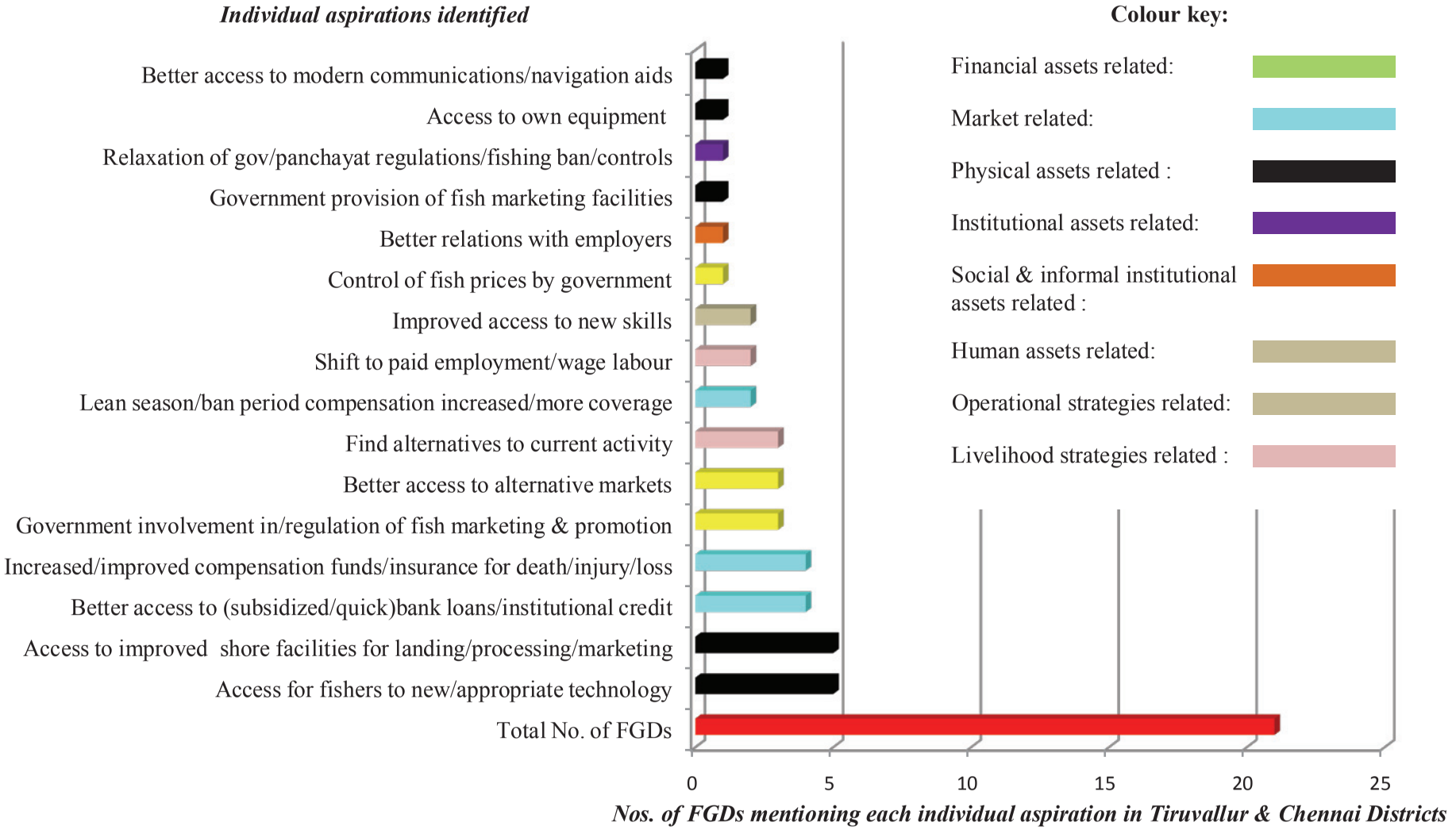


Figure 7.1.3 : Aspirations for children identified during FGDs in Tiruvallur & Chennai Districts

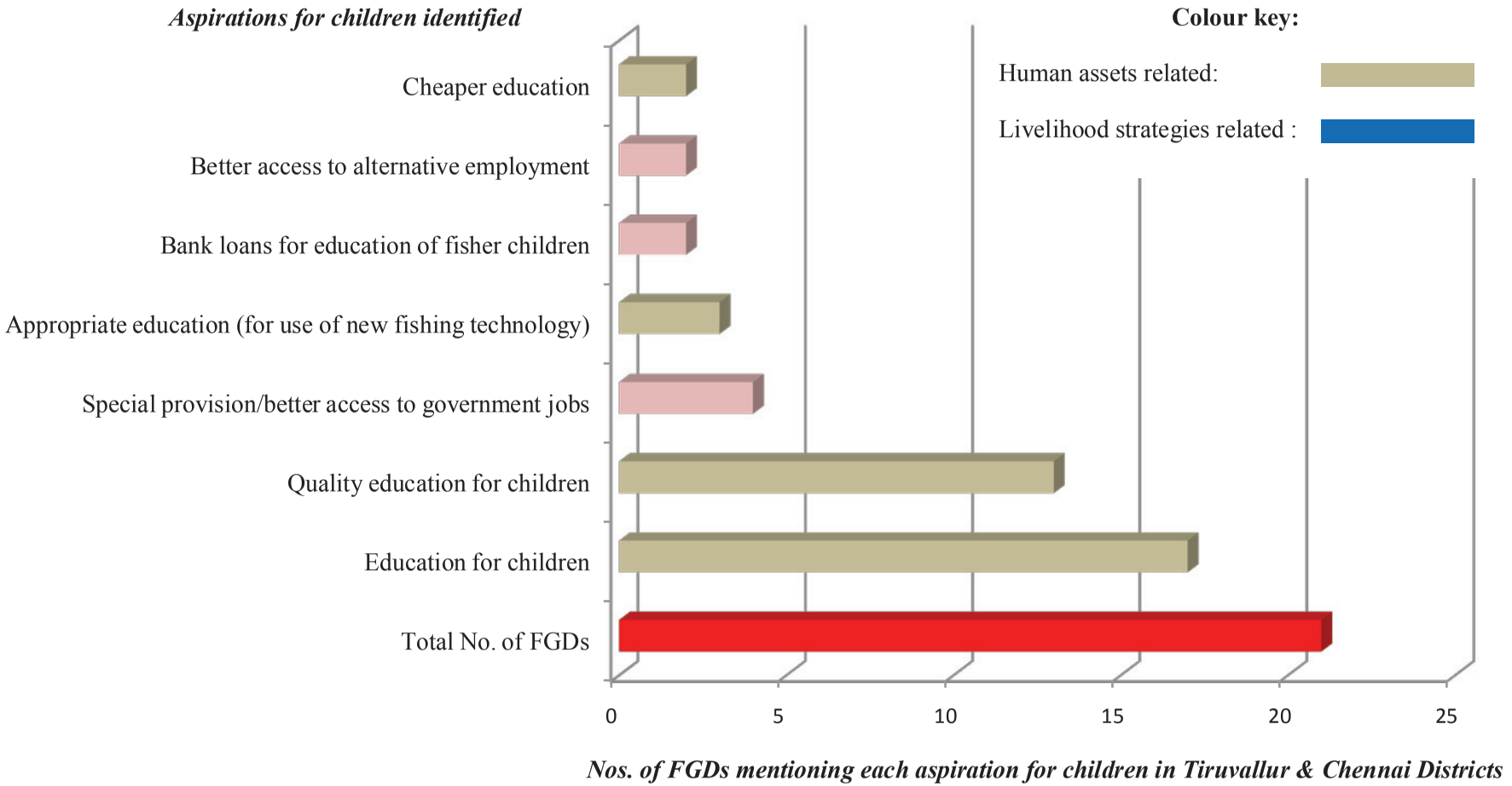
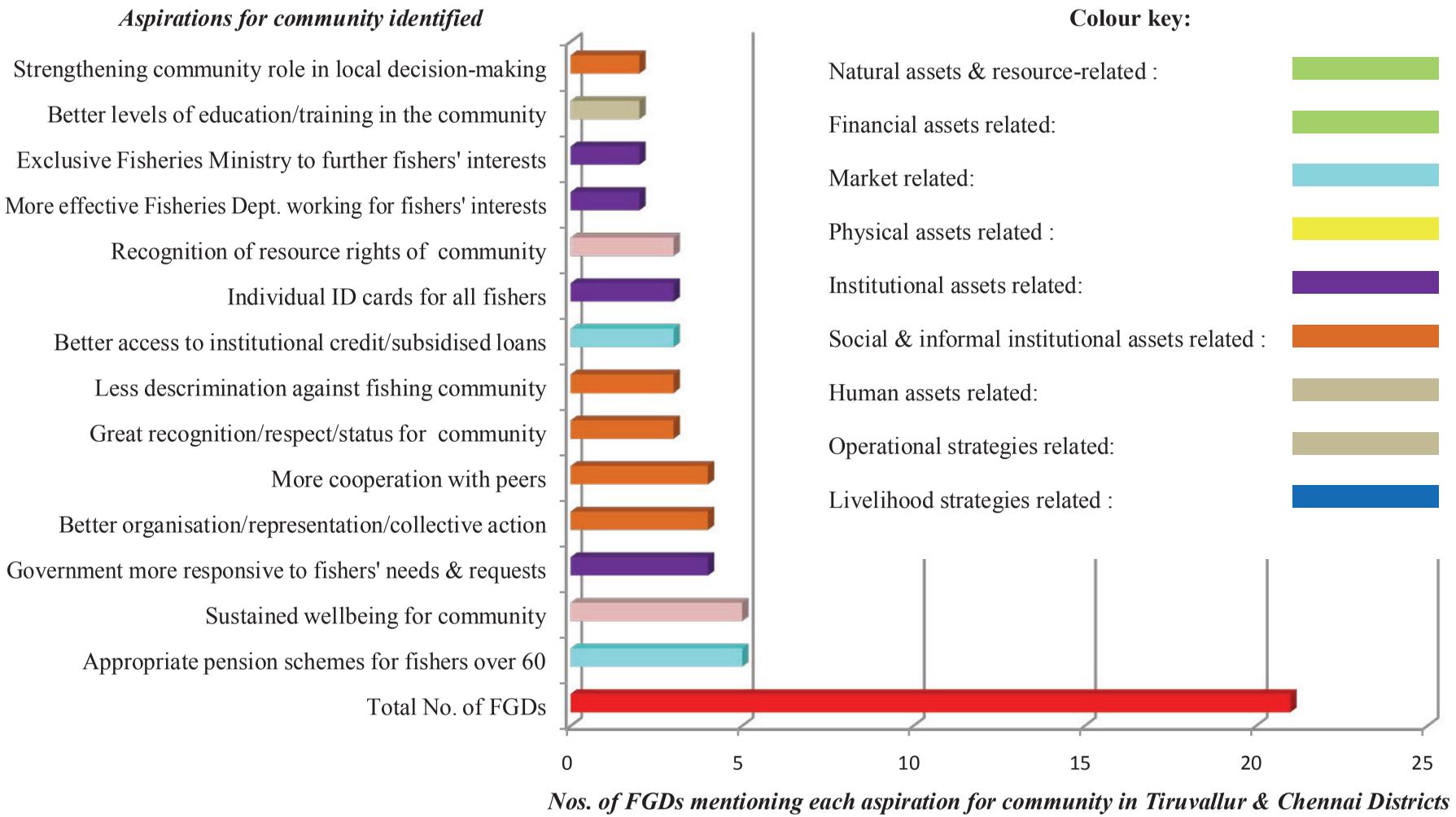


Figure 7.1.4 : Aspirations for their community identified during FGDs in Tiruvallur & Chennai Districts



Annex 7.2 Analysis of perceptions of future change and aspirations in Kancheepuram and Viluppuram Districts, Tamil Nadu

Figure 7.2.1 : Future positive changes identified during FGDs in Kancheepuram & Viluppuram Districts

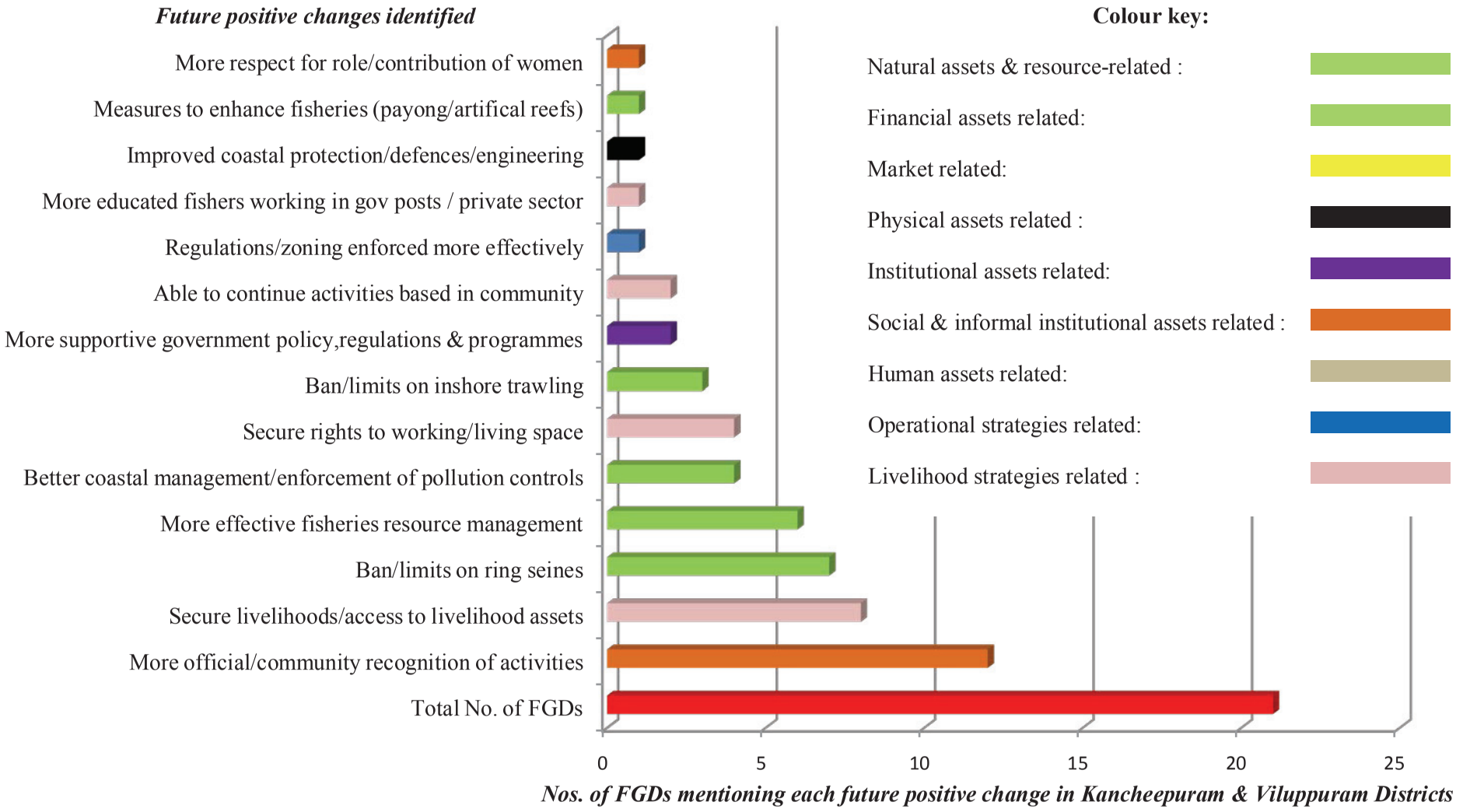


Figure 7.2.2 : Individual aspirations for the future identified during FGDs in Kancheepuram & Viluppuram Districts

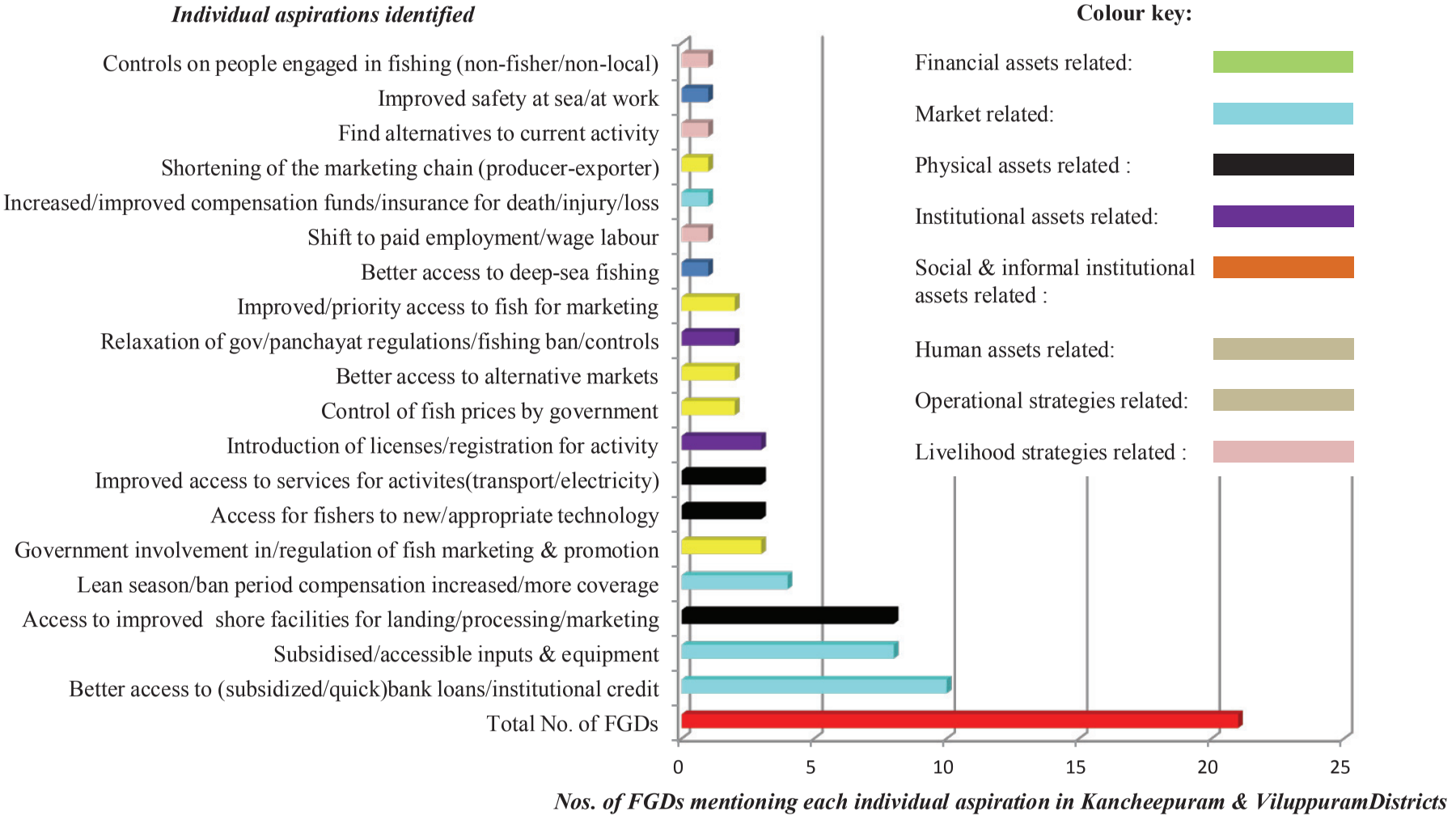
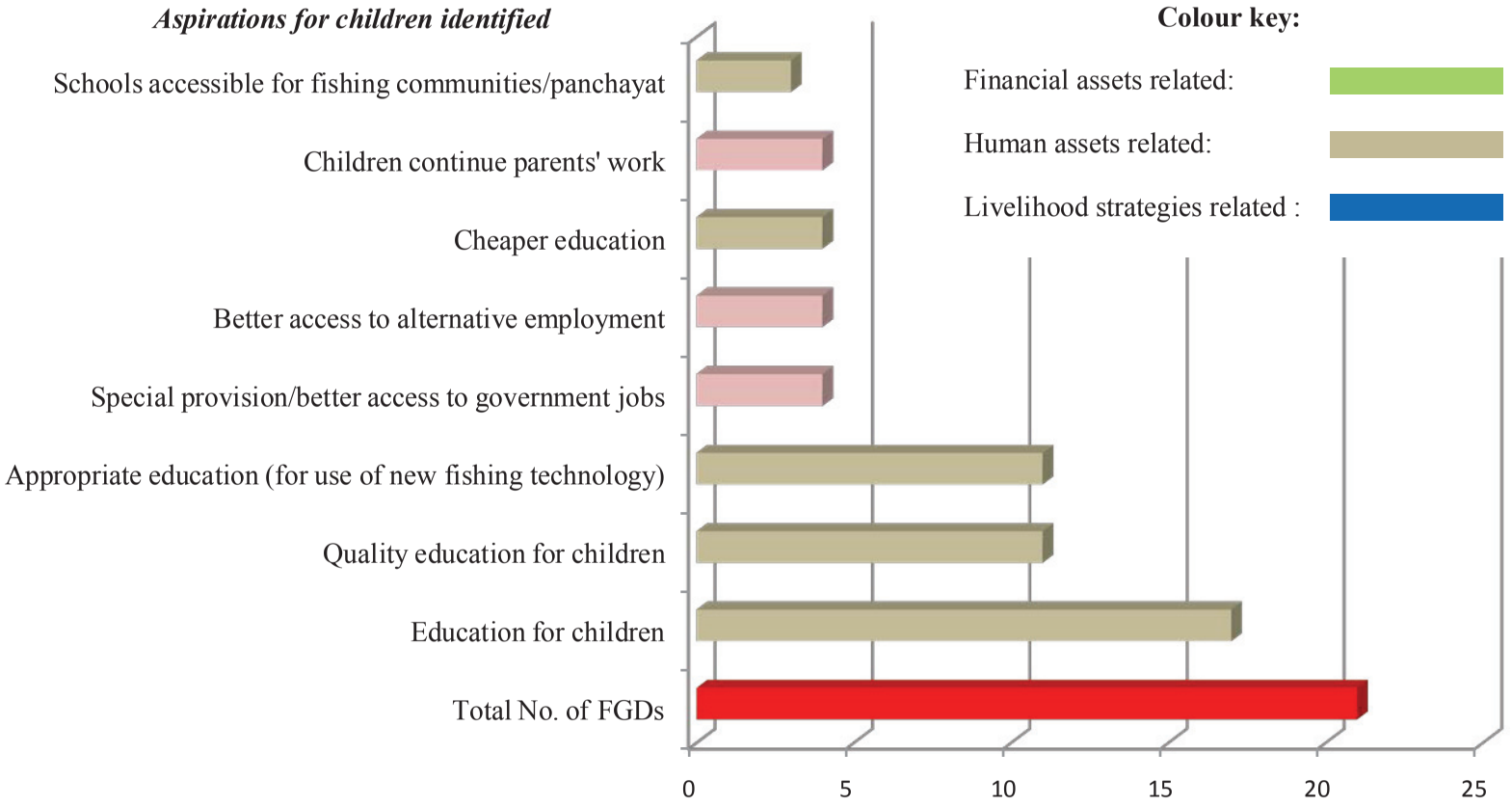
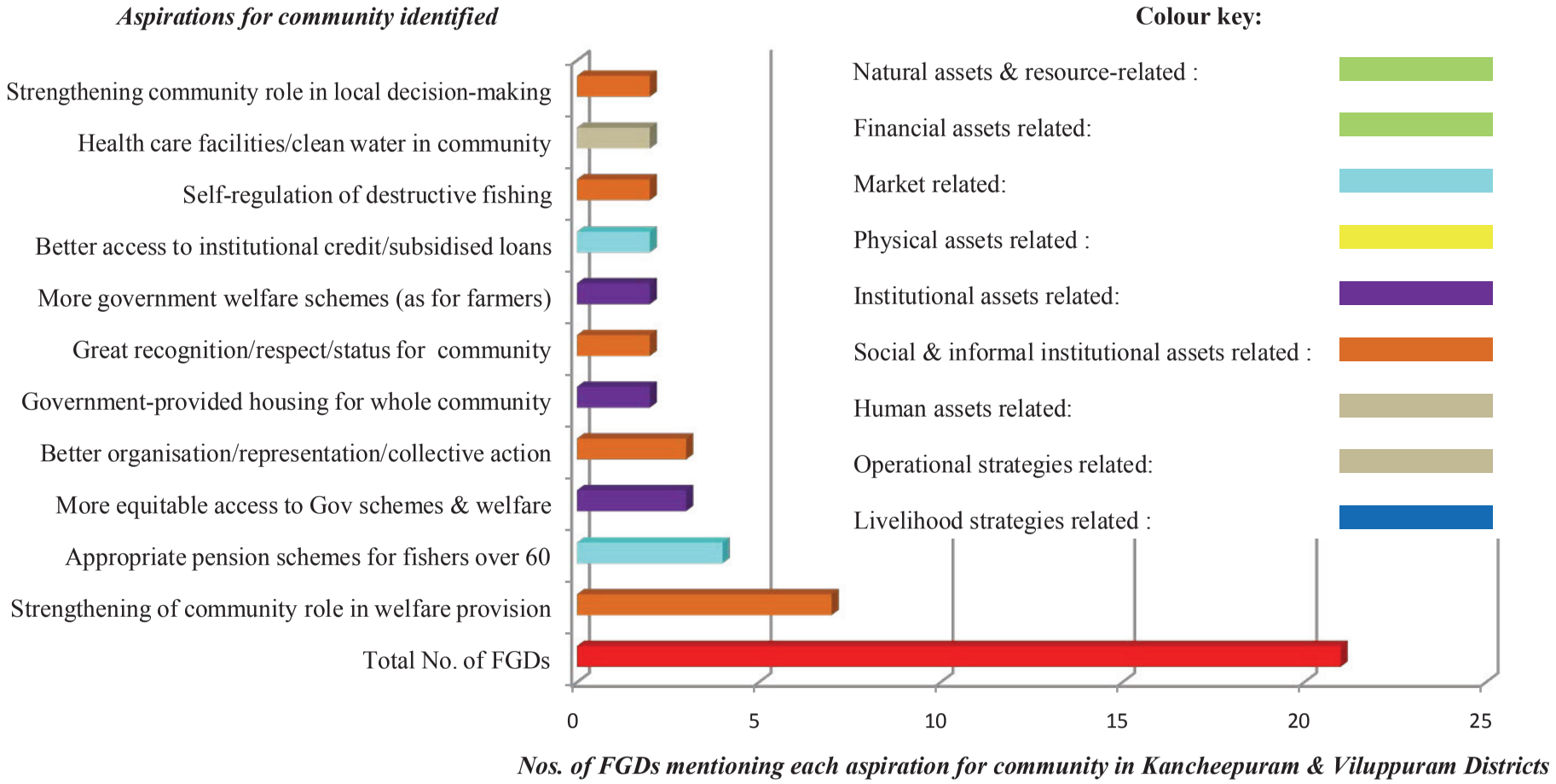


Figure 7.2.3 : Aspirations for children identified during FGDs in Kancheepuram & Viluppuram Districts



Nos. of FGDs mentioning each aspiration for children in Kancheepuram & Viluppuram Districts

Figure 7.2.4 : Aspirations for their community identified during FGDs in Kancheepuram & Viluppuram Districts



Annex 7.3 Analysis of perceptions of future change and aspirations in Puducherry and Karaikal Districts, Union Territory of Puducherry

Figure 7.3.1 : Future positive changes identified during FGDs in Puducherry & Karaikal

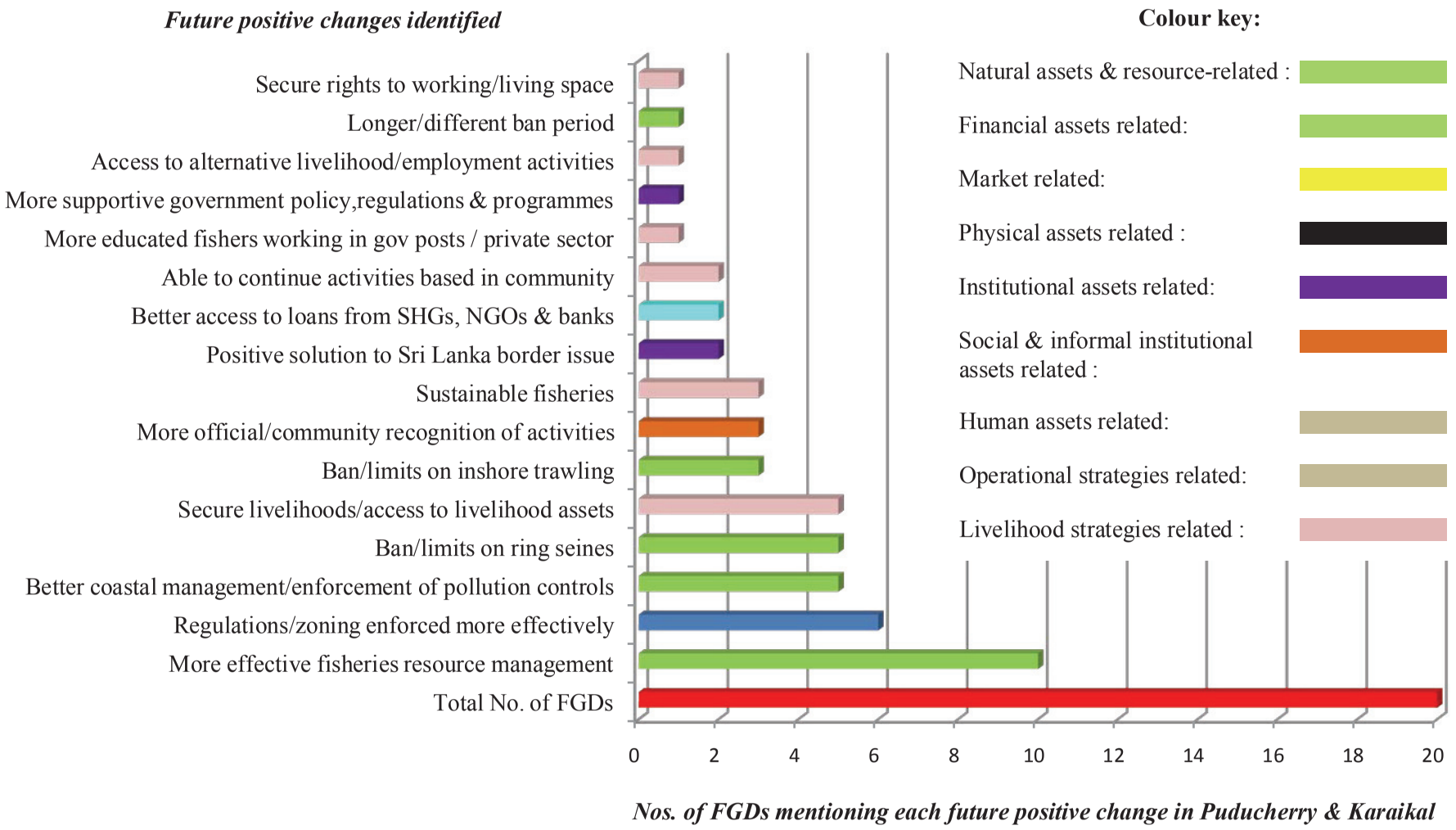


Figure 7.3.2 : Individual aspirations for the future identified during FGDs in Puducherry & Karaikal

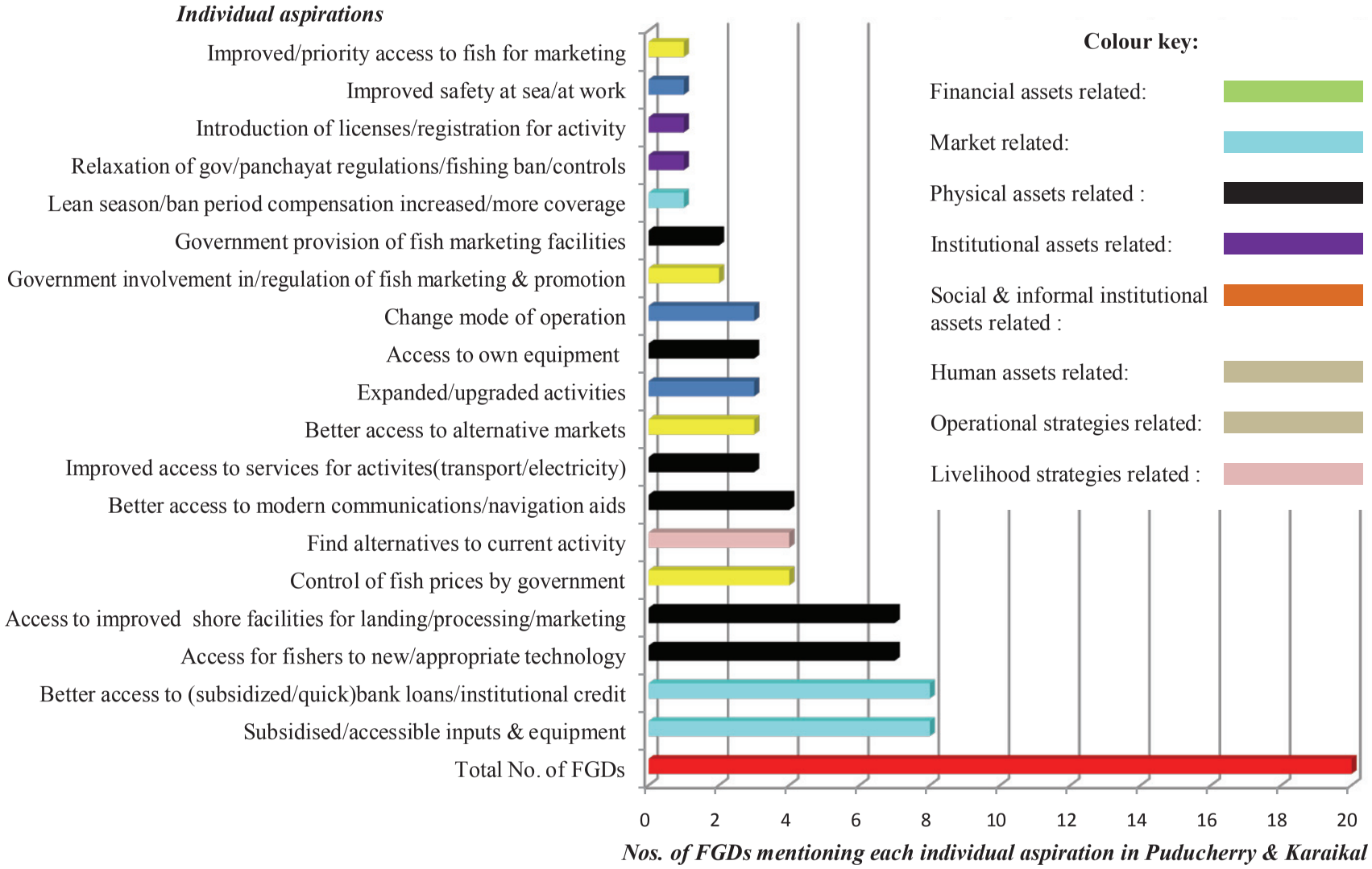


Figure 7.3.3 : Aspirations for children identified during FGDs in Puducherry & Karaikal

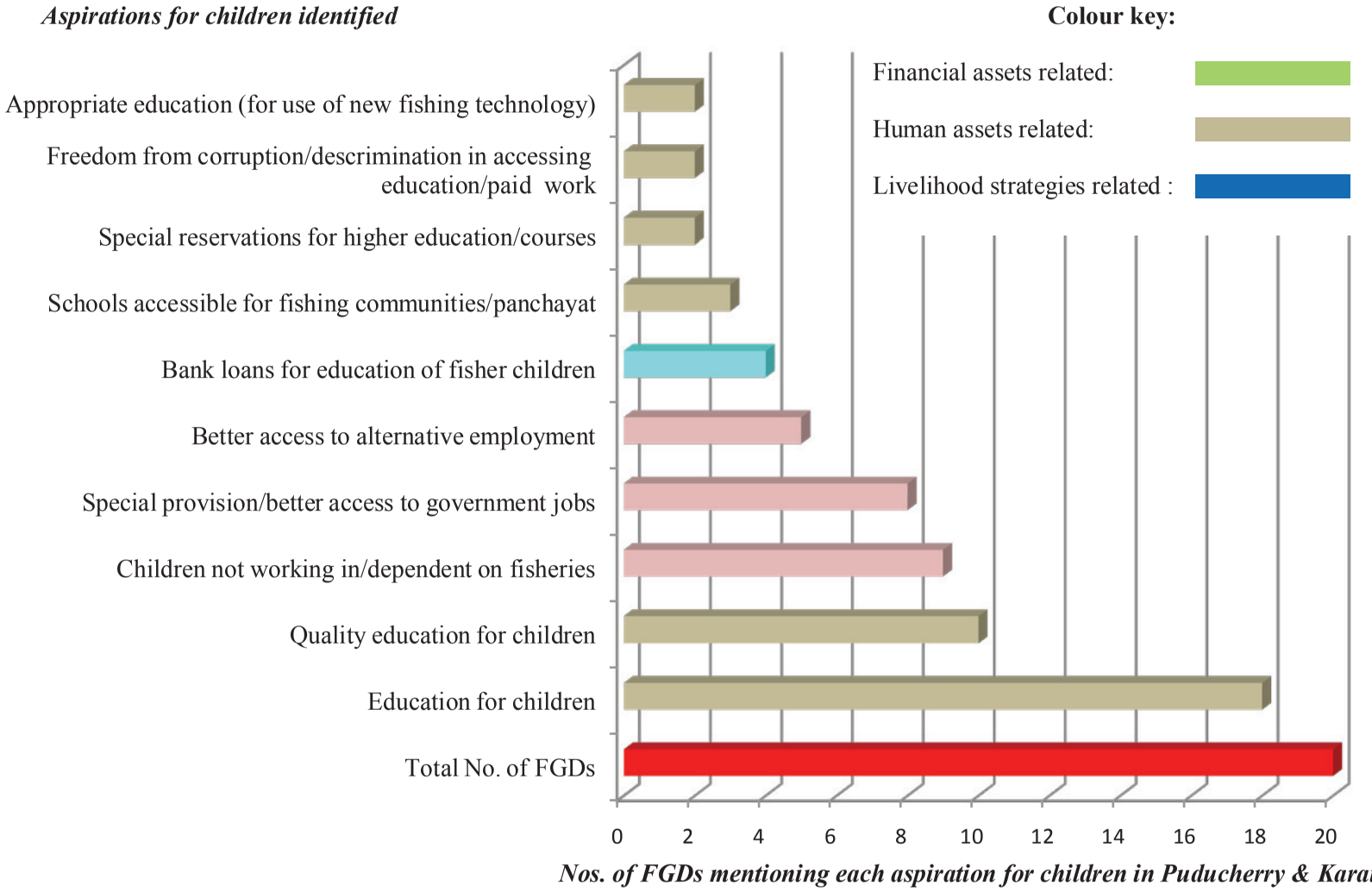
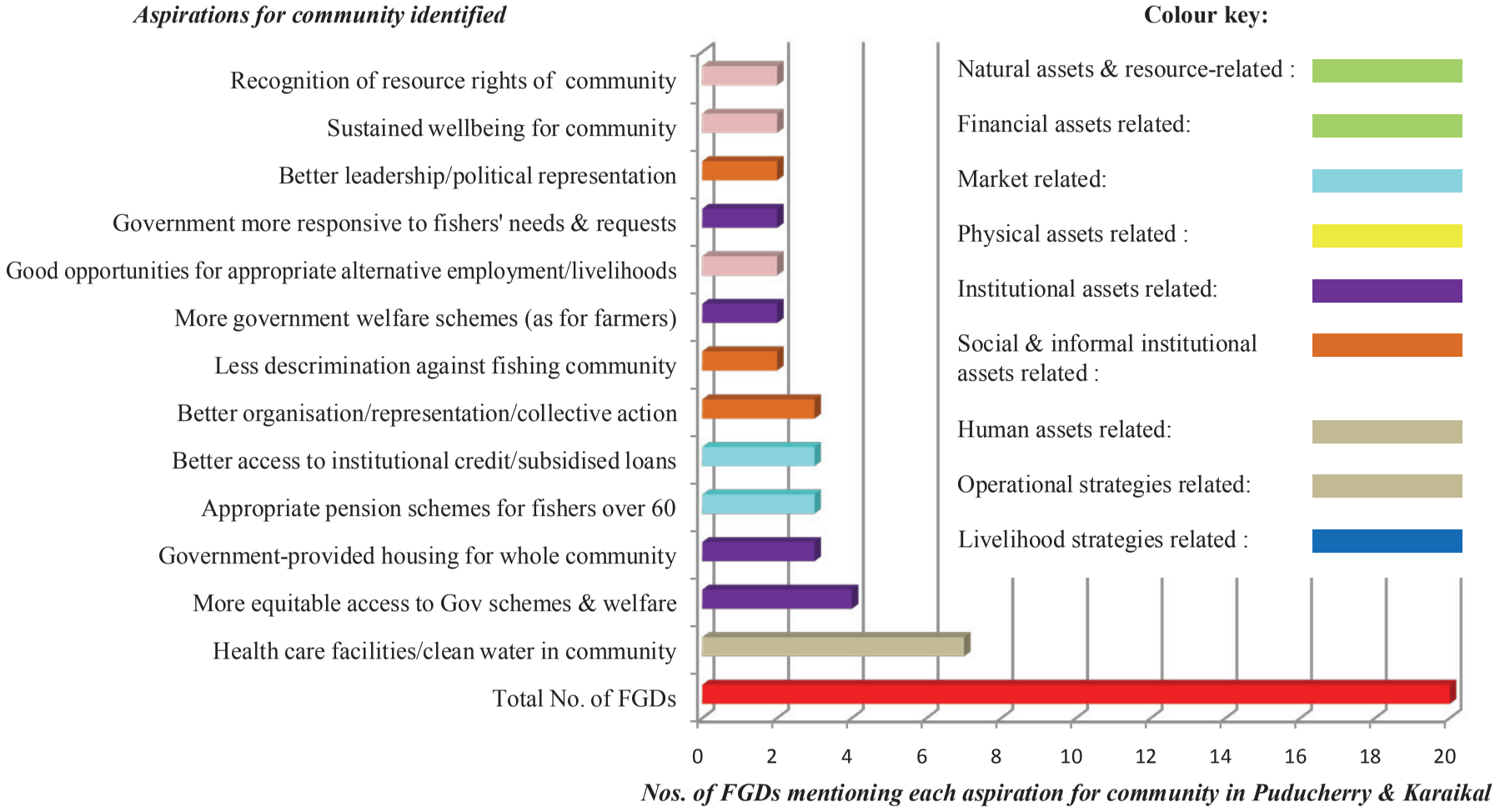


Figure 7.3.4 : Aspirations for their community identified during FGDs in Puducherry & Karaikal



Annex 7.4 Analysis of perceptions of future change and aspirations in Cuddalore and Nagapattinam Districts, Tamil Nadu

Figure 7.4.1 : Future positive changes identified during FGDs in Cuddalore & Nagapattinam Districts

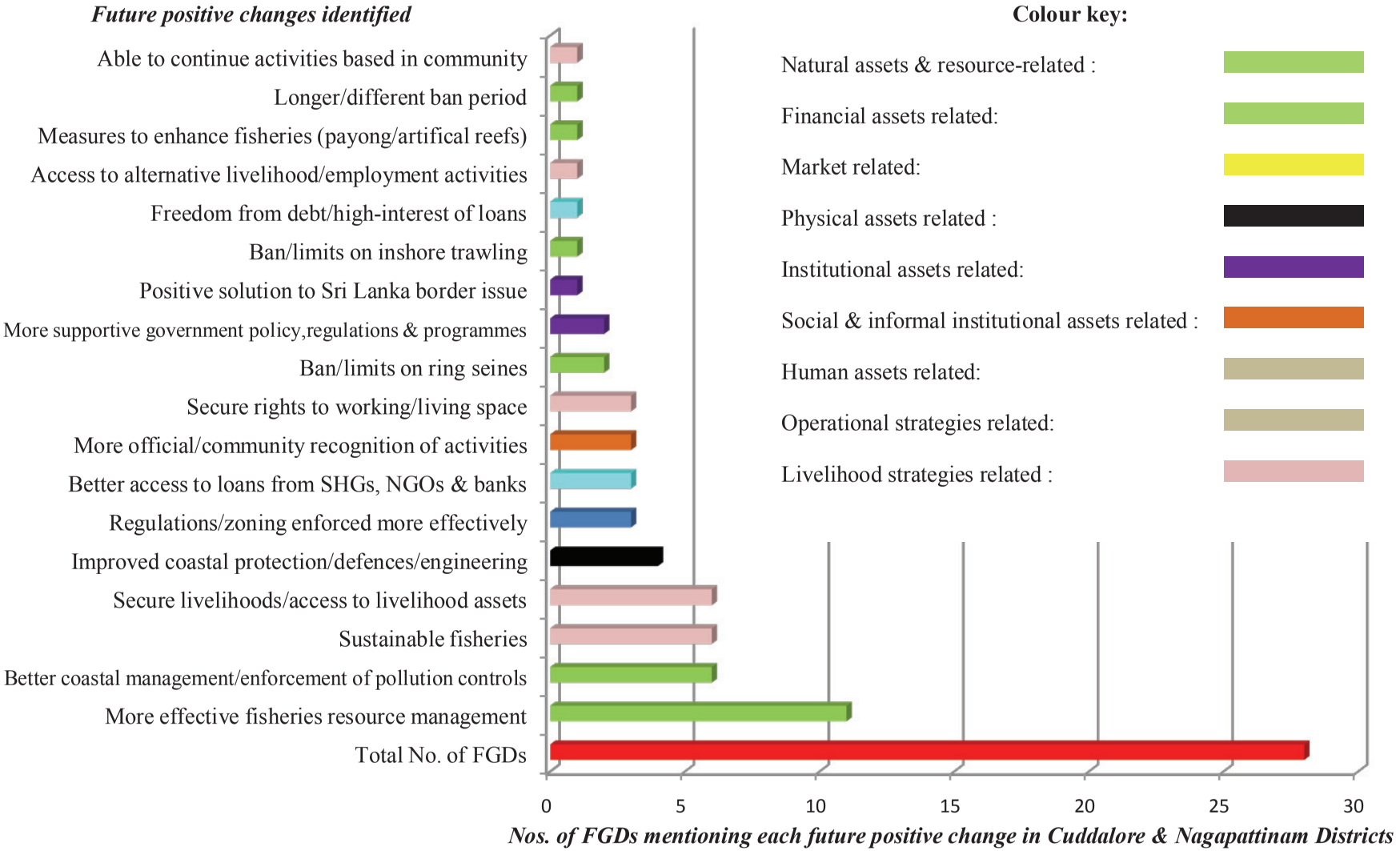


Figure 7.4.2 : Individual aspirations for the future identified during FGDs in Cuddalore & Nagapattinam Districts

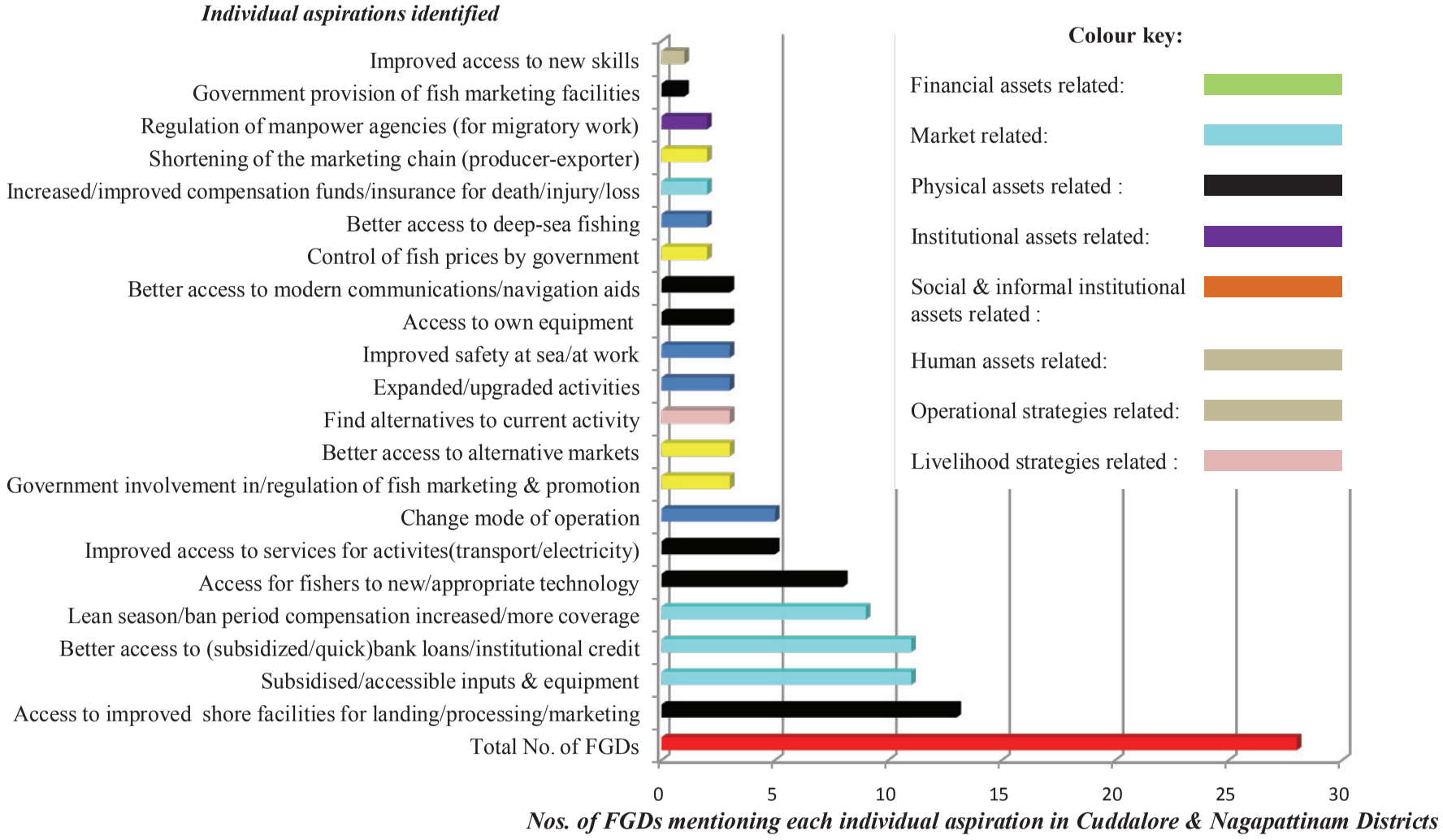


Figure 7.4.3 : Aspirations for children identified during FGDs in Cuddalore & Nagapattinam Districts

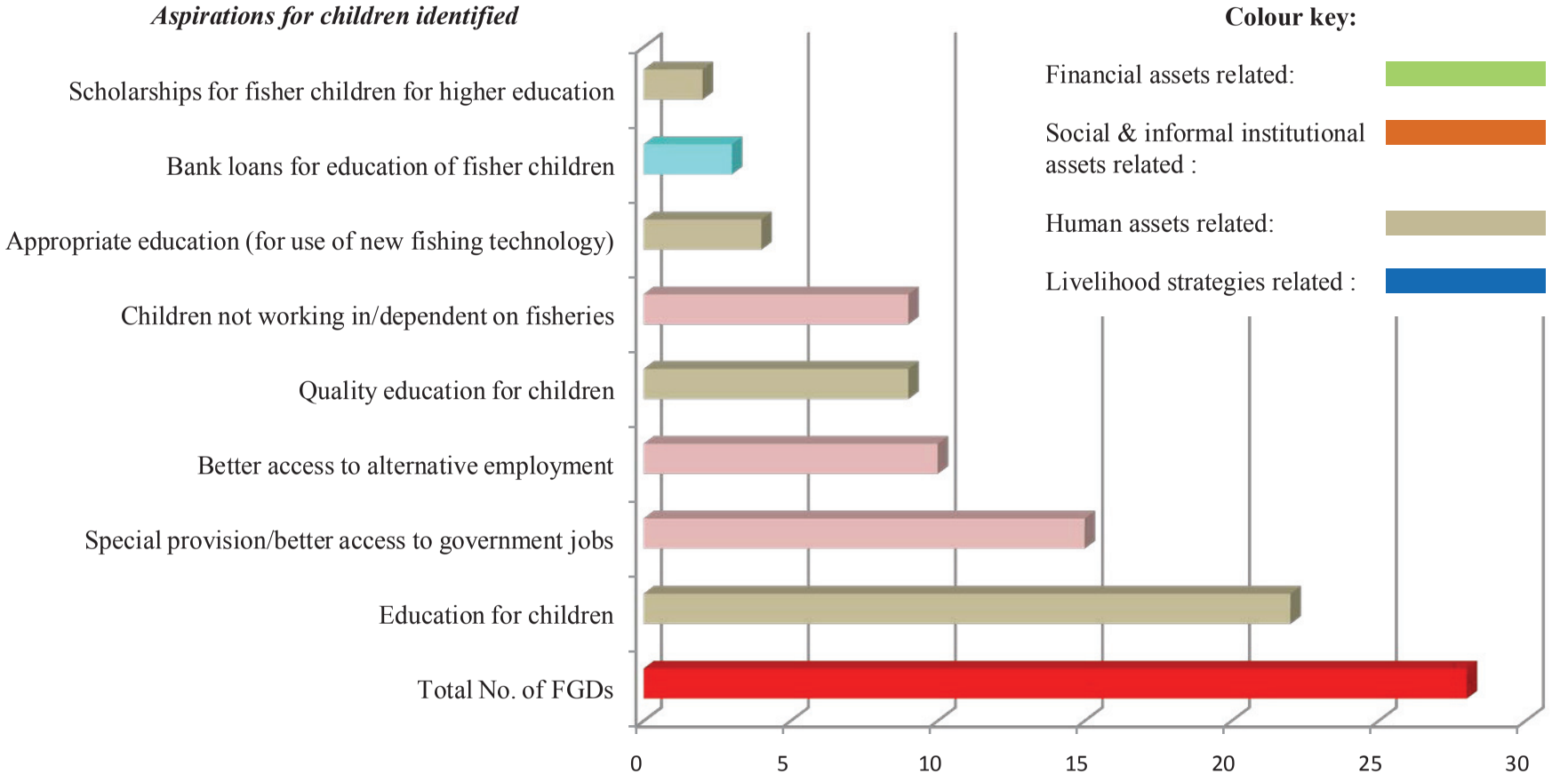
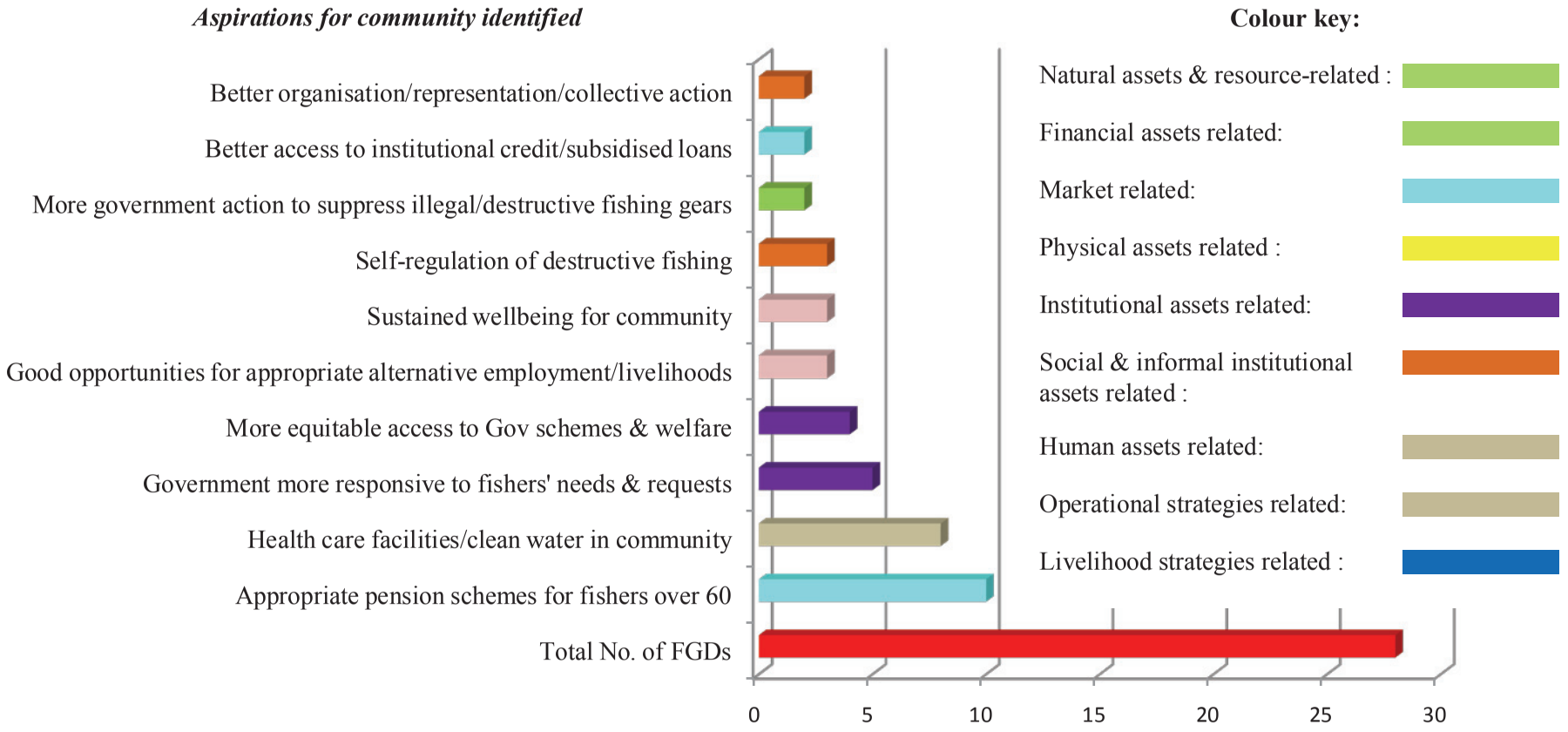


Figure 7.4.4 : Aspirations for their community identified during FGDs in Cuddalore & Nagapattinam Districts



Nos. of FGDs mentioning each aspiration for community in Cuddalore & Nagapattinam Districts

Annex 7.5 Analysis of perceptions of future change and aspirations in Thanjavur and Tiruvarur Districts, Tamil Nadu

Figure 7.5.1 : Future positive changes identified during FGDs in Thanjavur & Tiruvarur Districts

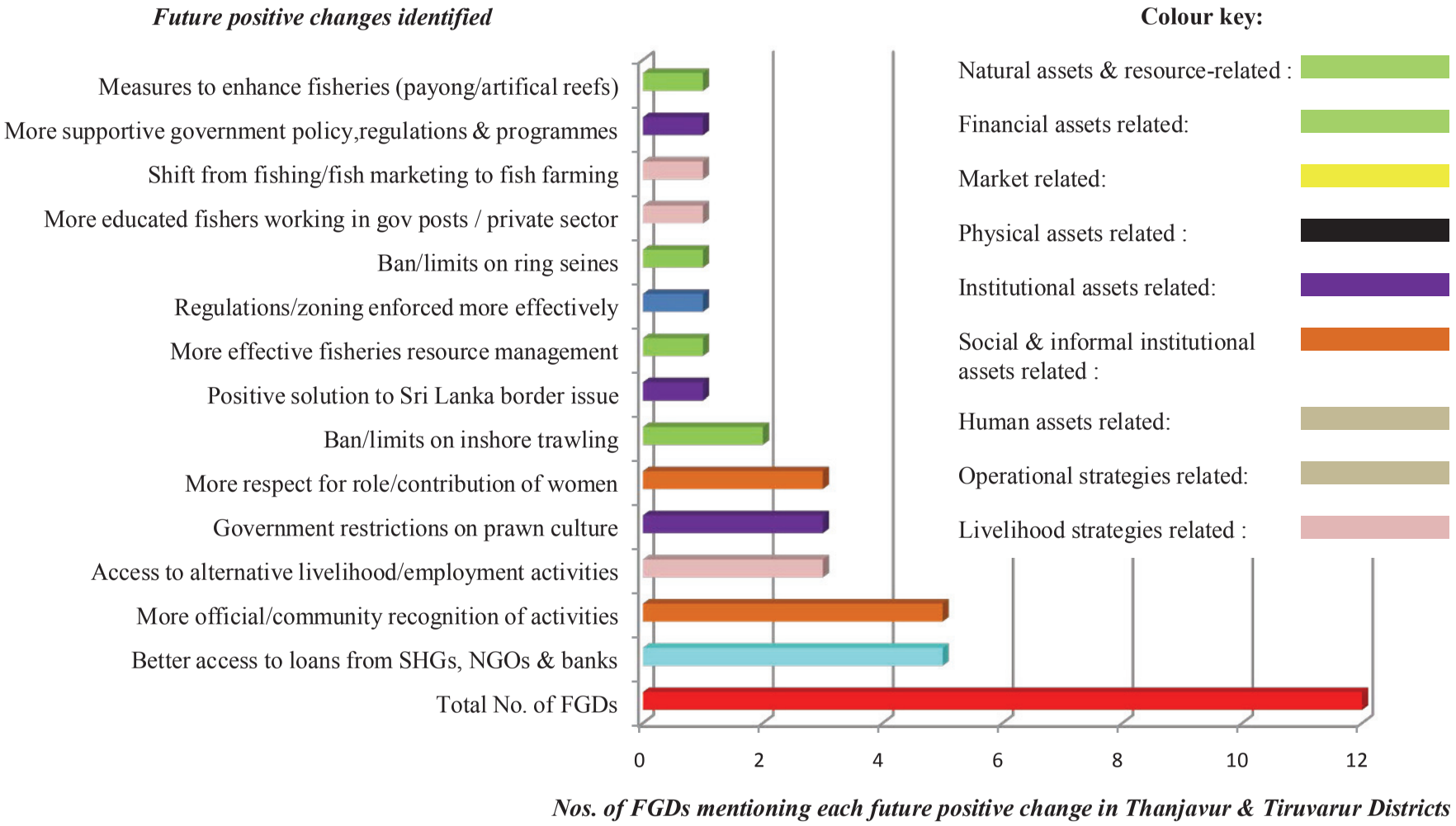


Figure 7.5.2 : Individual aspirations for the future identified during FGDs in Thanjavur & Tiruvarur Districts

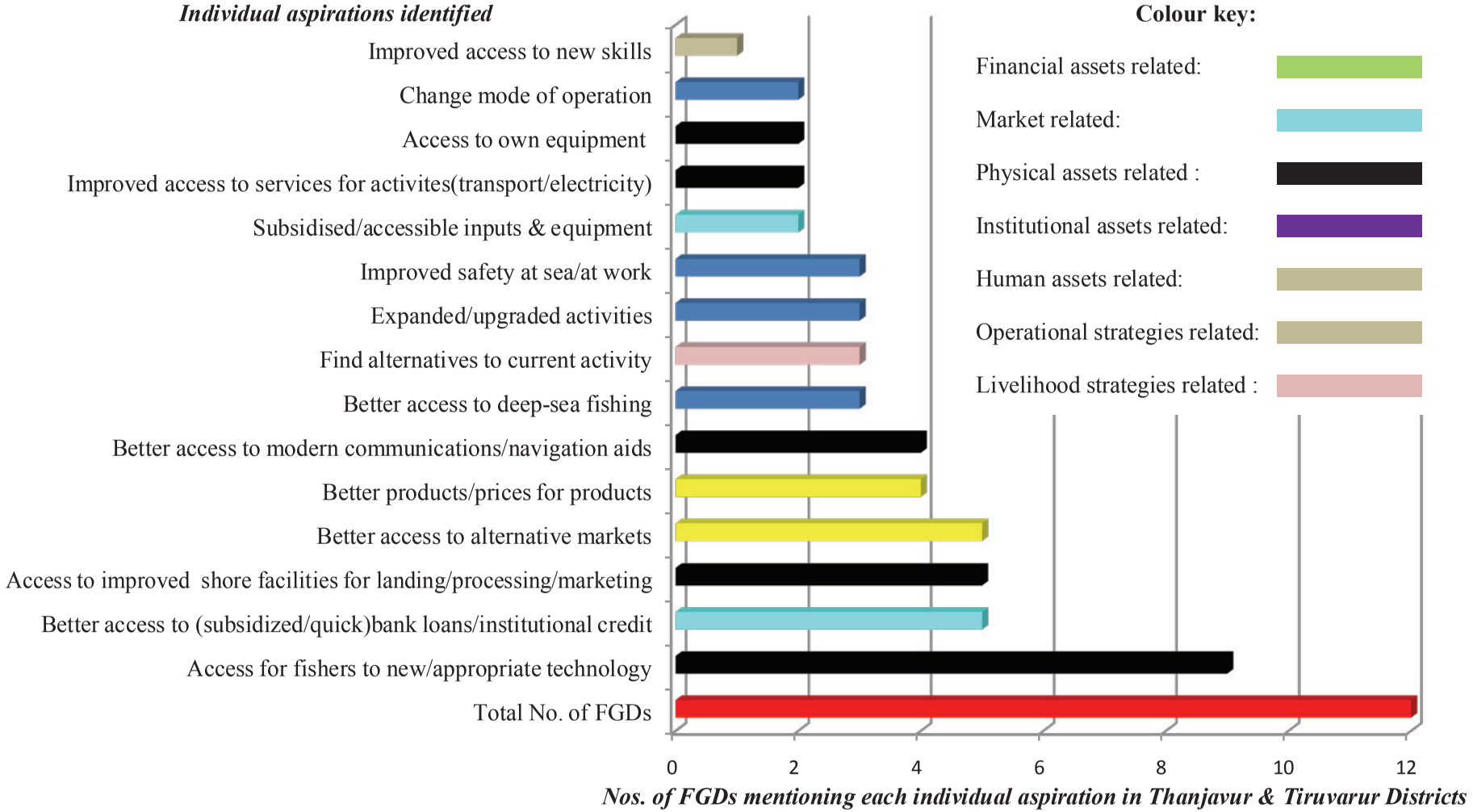


Figure 7.5.3 : Aspirations for children identified during FGDs in Thanjavur & Tiruvarur Districts

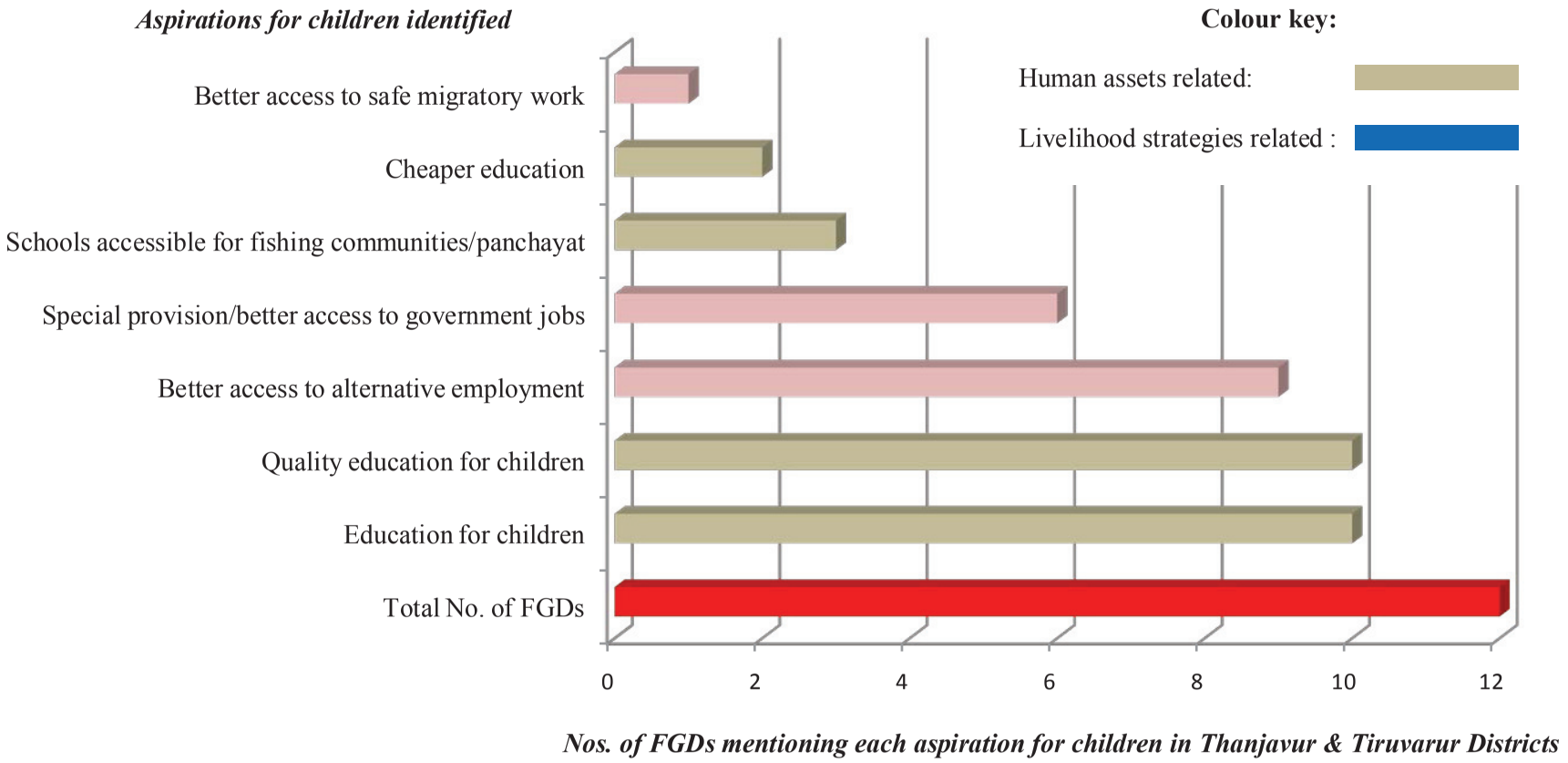
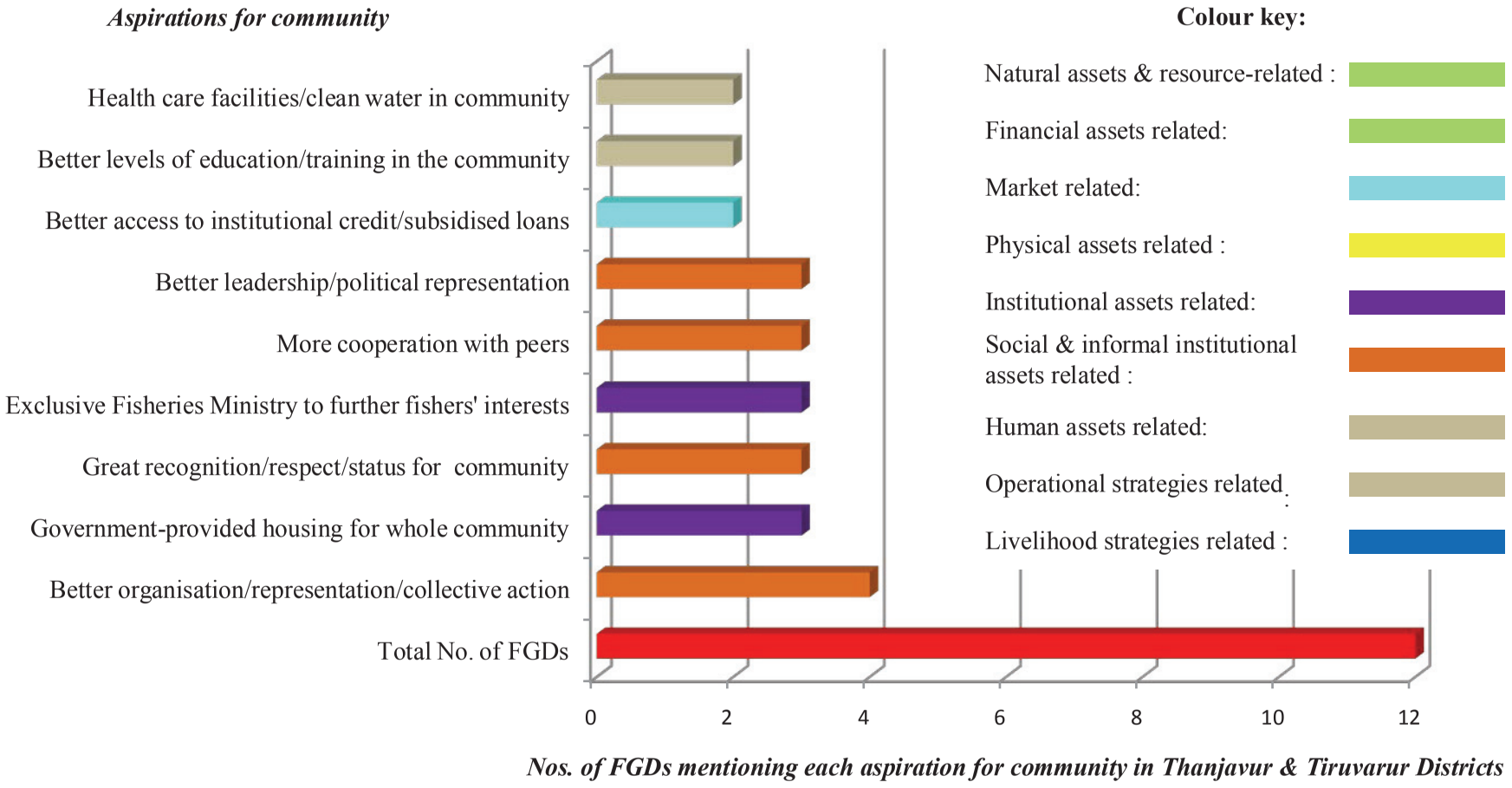


Figure 7.5.4 : Aspirations for their community identified during FGDs in Thanjavur & Tiruvarur Districts



Annex 7.6 Analysis of perceptions of future change and aspirations in Pudukottai and Ramnathapuram Districts, Tamil Nadu

Figure 7.6.1 : Future positive changes identified during FGDs in Pudukottai & Ramnathapuram Districts

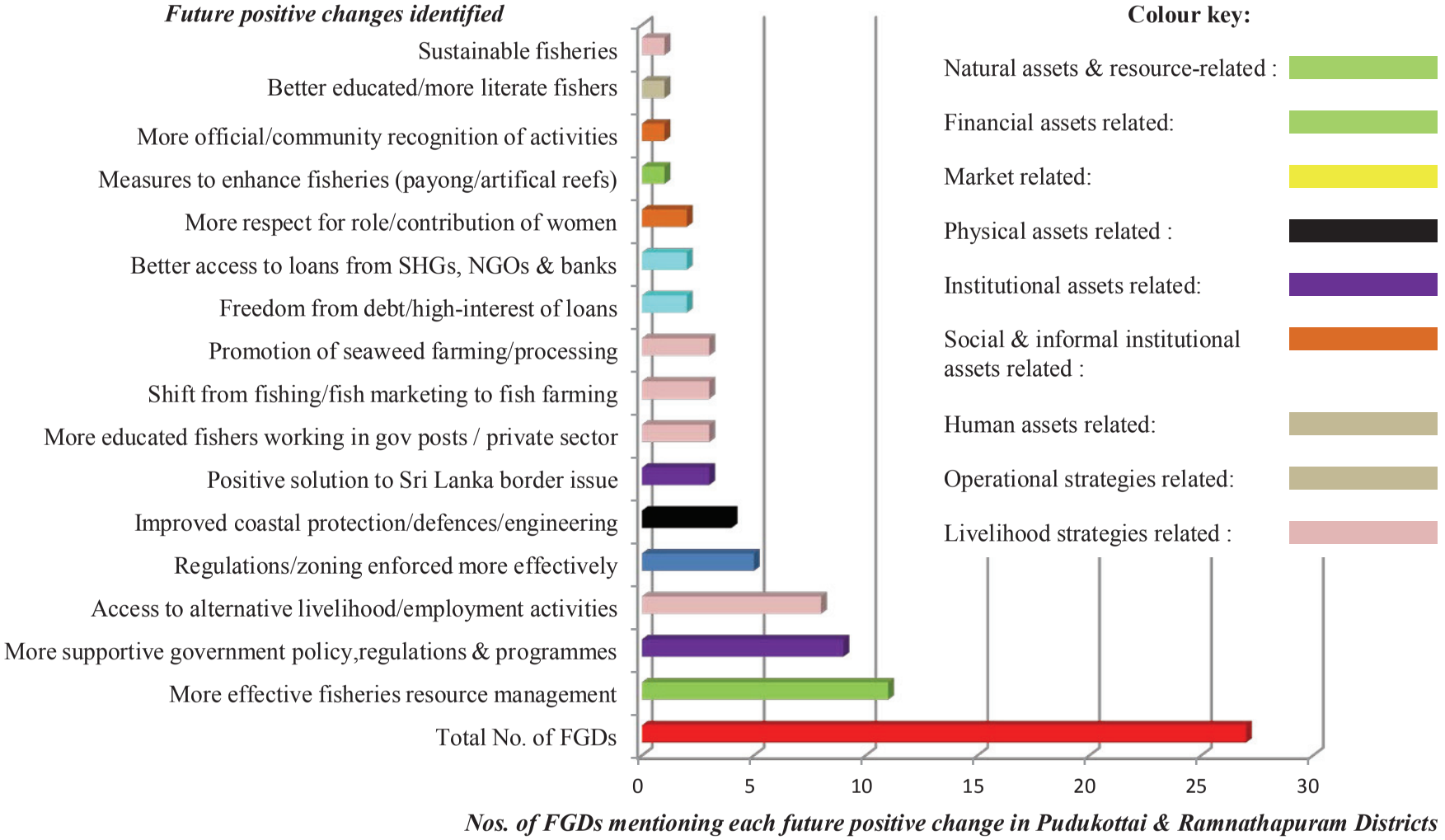


Figure 7.6.2 : Individual aspirations for the future identified during FGDs in Pudukottai & Ramnathapuram

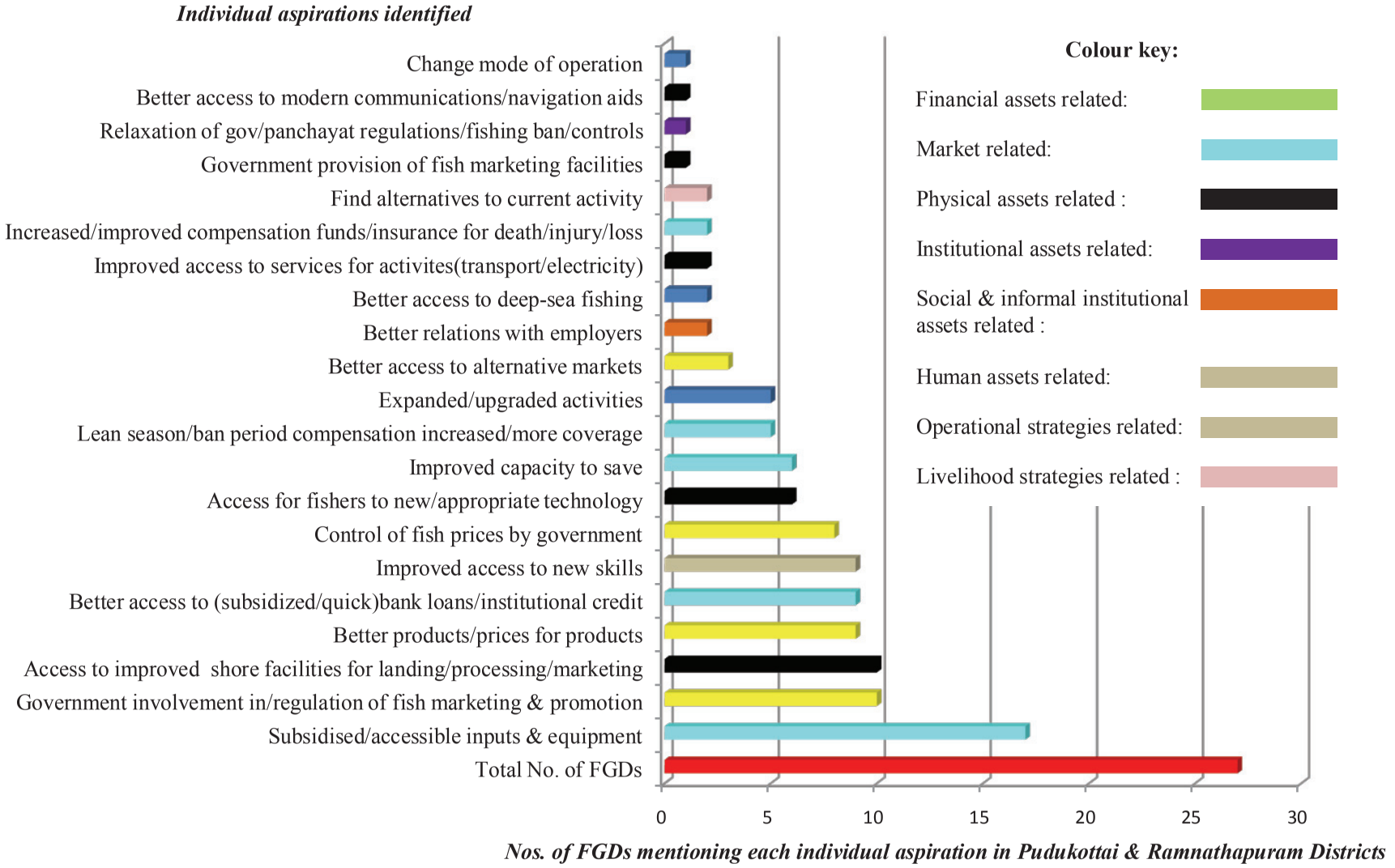


Figure 7.6.3 : Aspirations for children identified during FGDs in Pudukottai & Ramnathapuram Districts

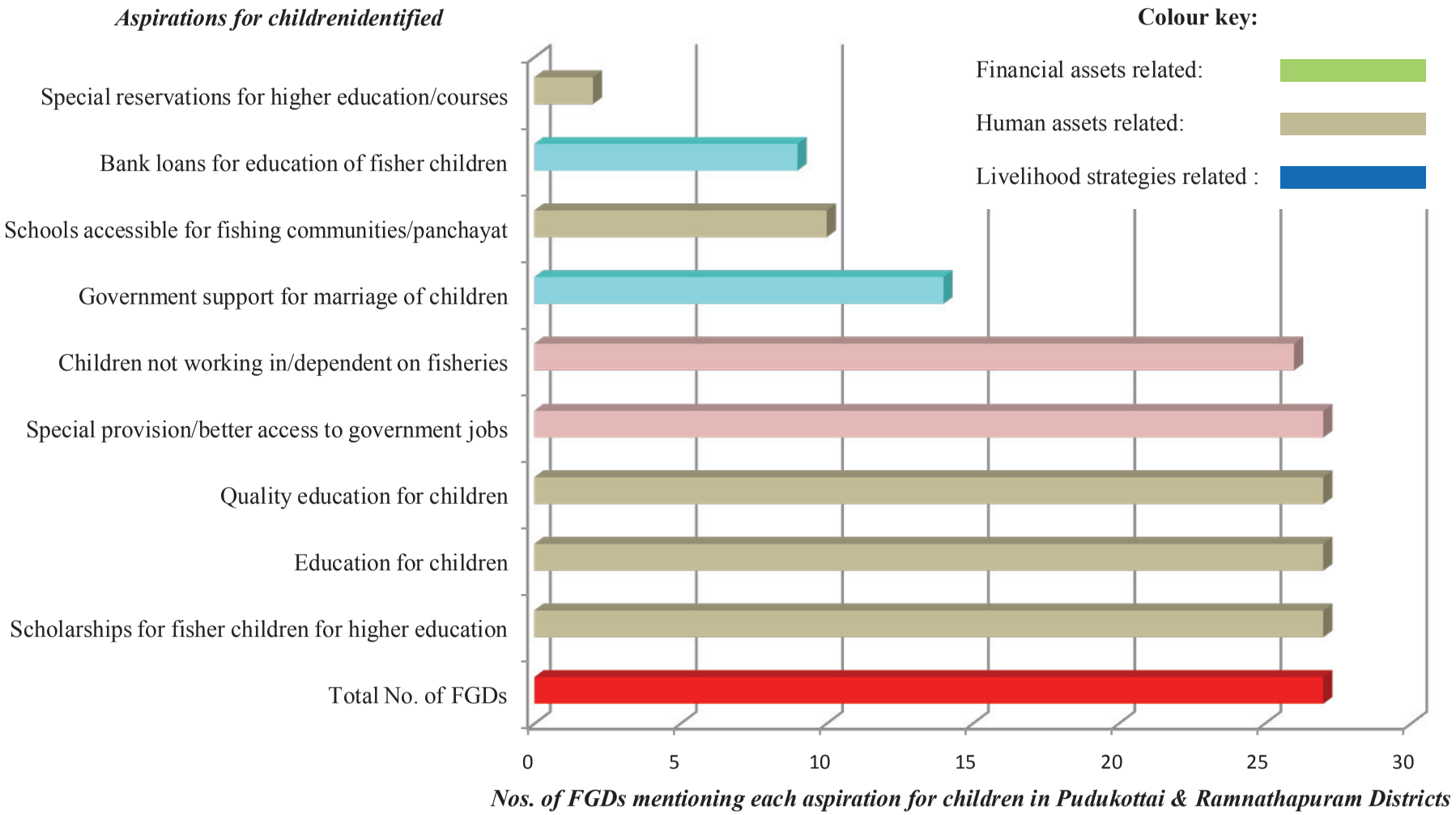
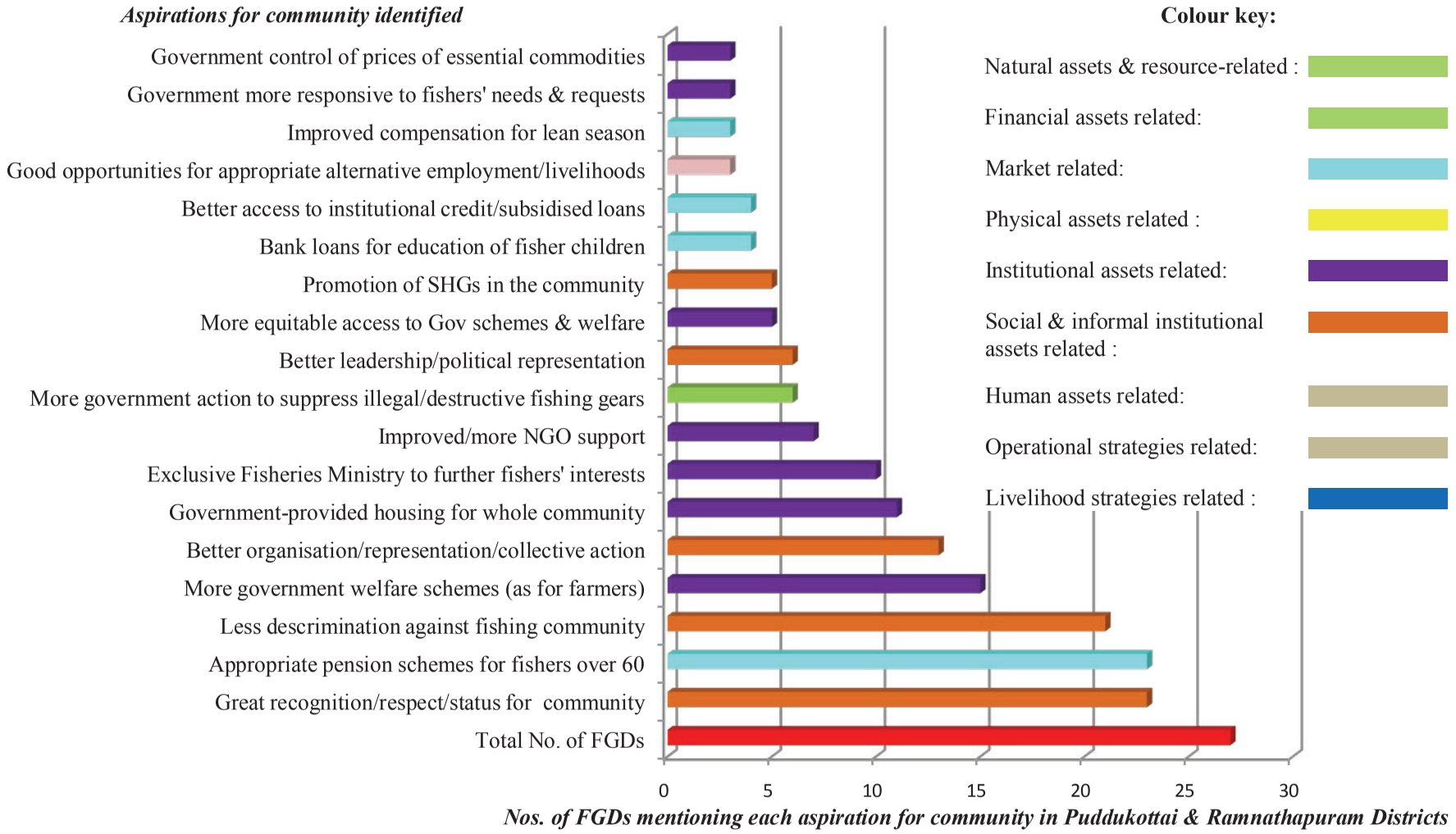


Figure 7.6.4 : Aspirations for their community identified during FGDs in Puddukottai & Ramnathapuram Districts



Annex 7.7 Analysis of perceptions of future change and aspirations in Thoothukudi and Tirunelveli Districts, Tamil Nadu

Figure 7.7.1 : Future positive changes identified during FGDs in Thoothukudi & Tirunelveli Districts

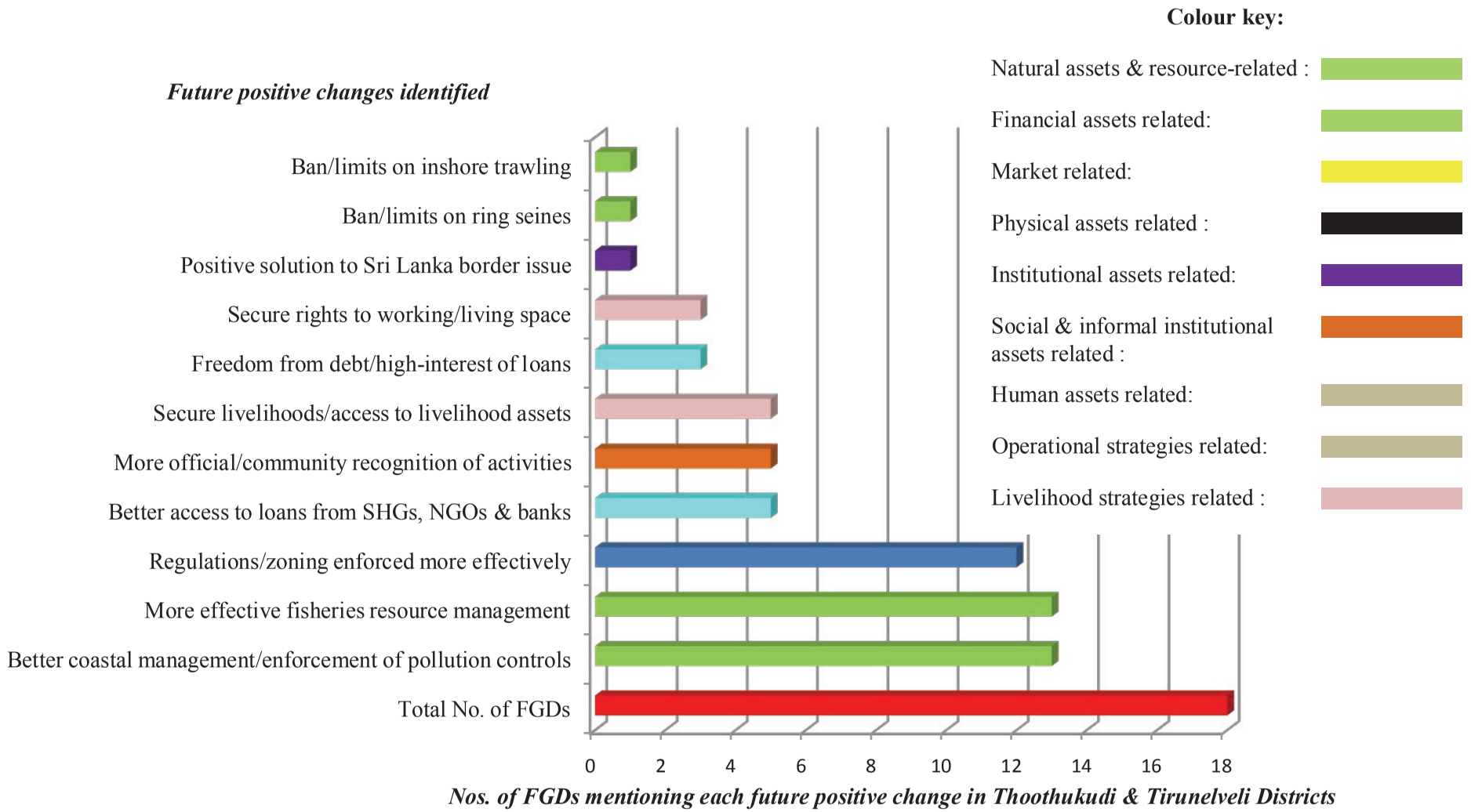


Figure 7.7.2 : Individual aspirations for the future identified during FGDs in Thoothukudi & Tirunelveli Districts

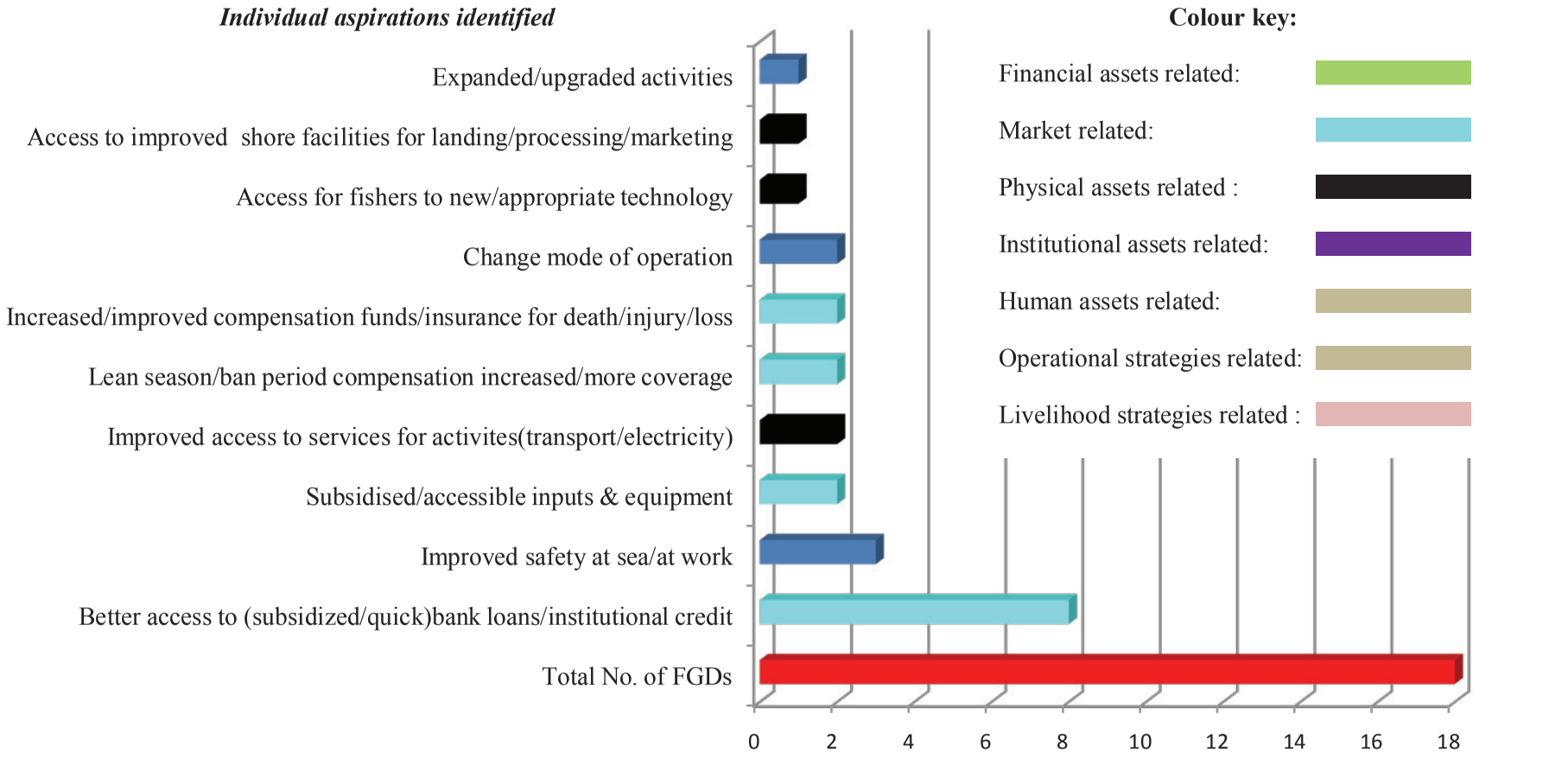


Figure 7.7.3 : Aspirations for children identified during FGDs in Thoothukudi & Tirunelveli Districts

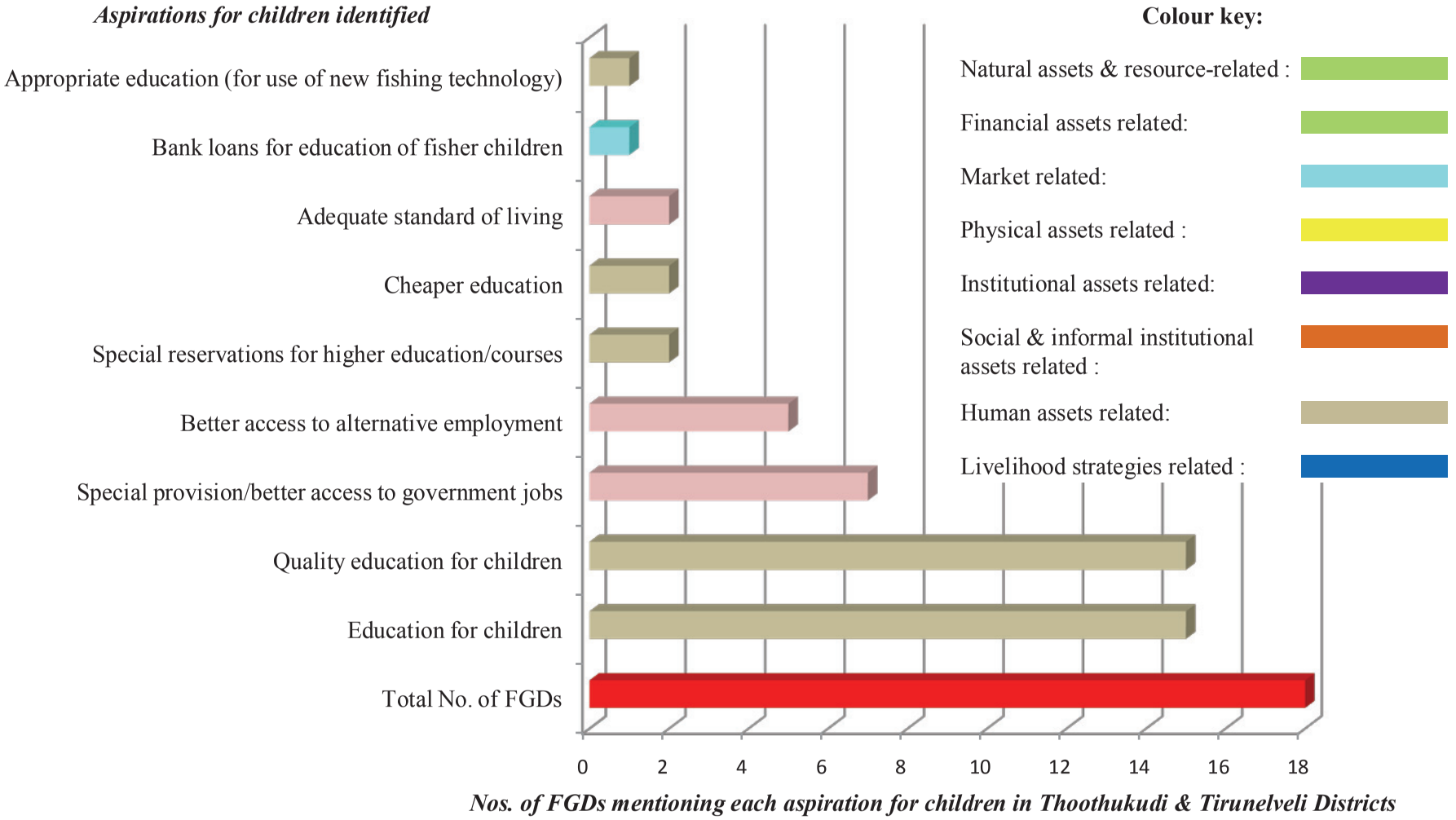
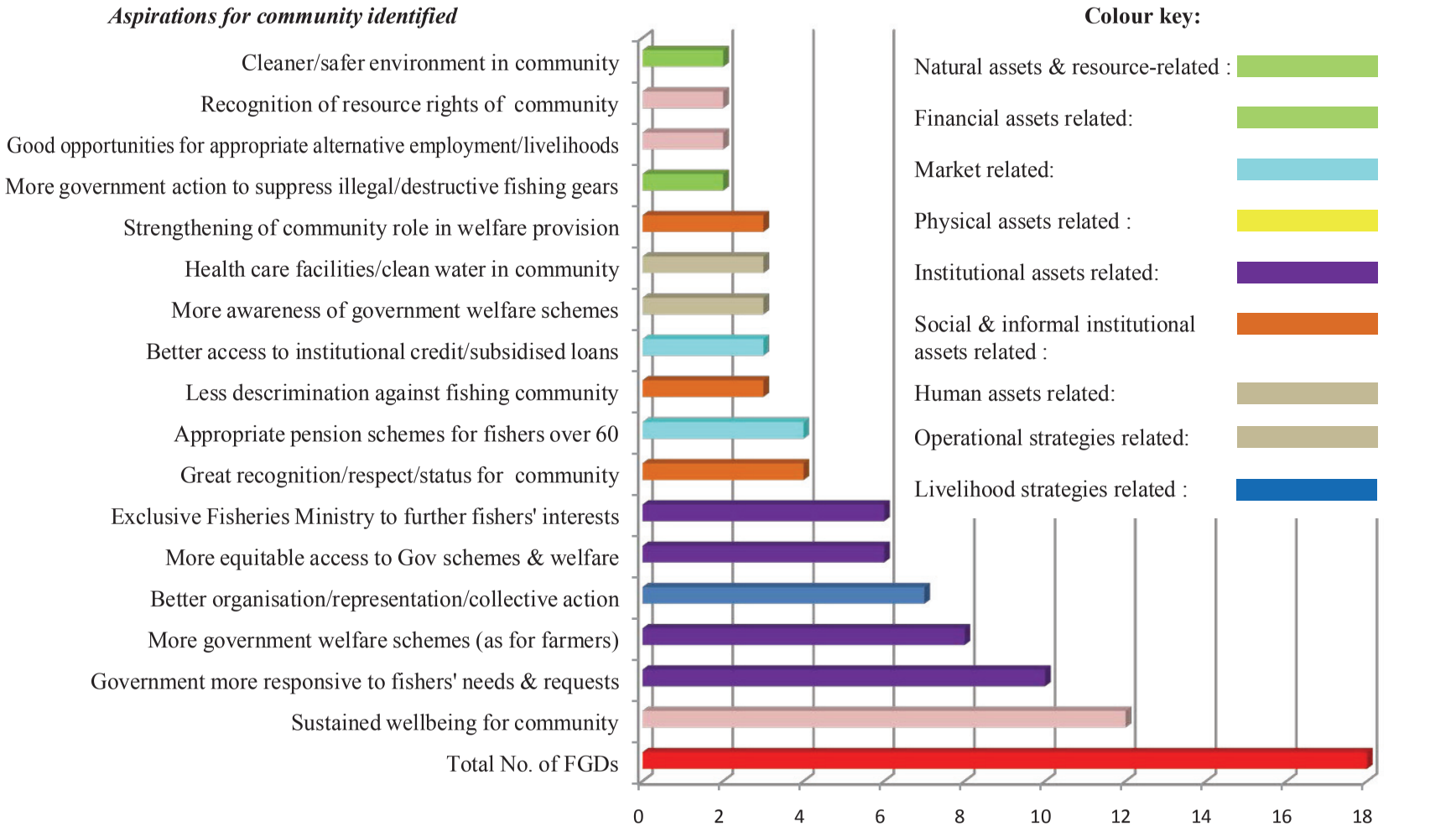


Figure 7.7.4 : Aspirations for their community identified during FGDs in Thoothukudi & Tirunelveli Districts



Annex 7.8 Analysis of perceptions of future change and aspirations in Kanyakumari District, Tamil Nadu

Figure 7.8.1 : Future positive changes identified during FGDs in Kanyakumari District

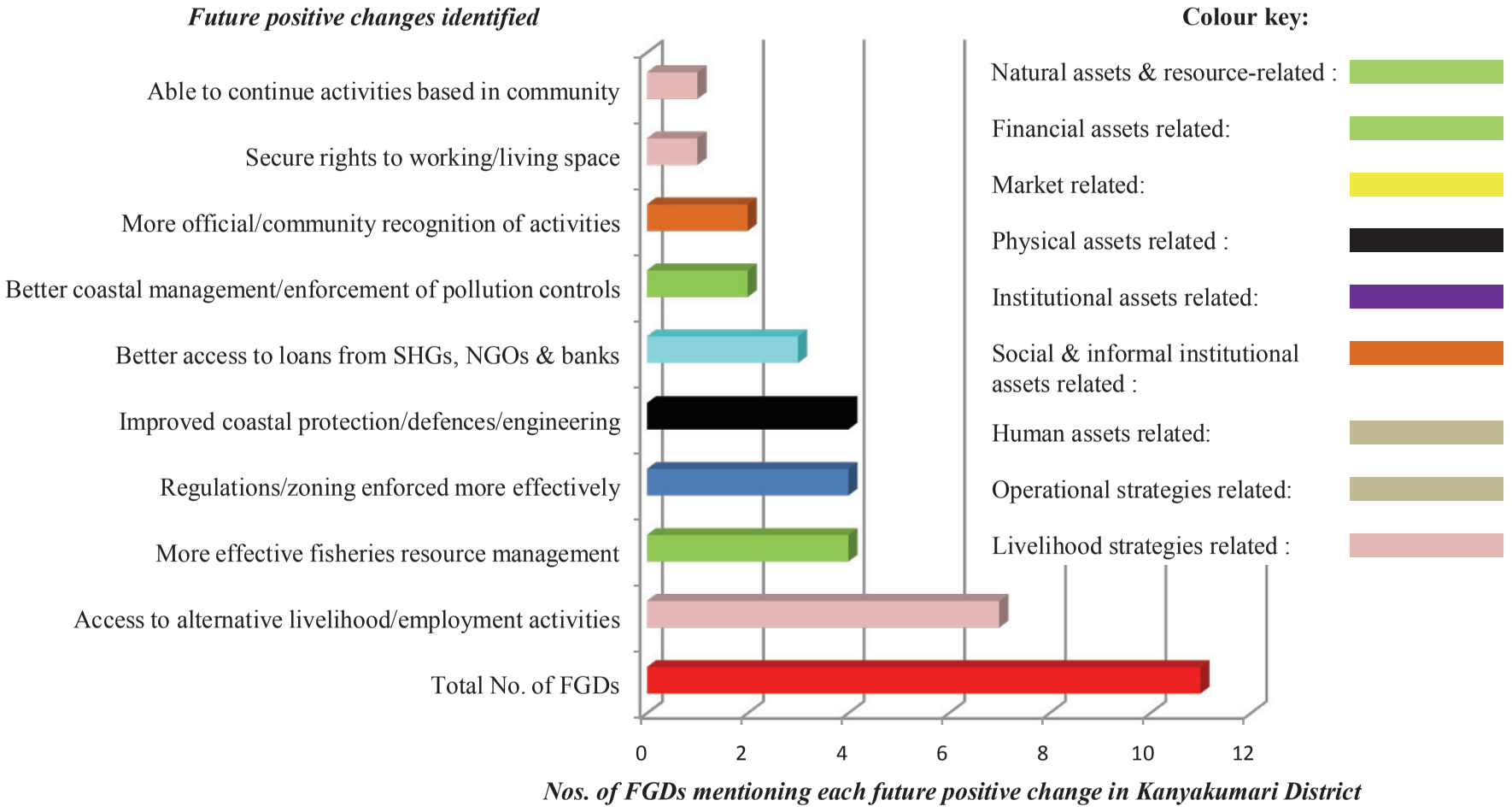


Figure 7.8.2 : Individual aspirations for the future identified during FGDs in KanyakumariDistrict

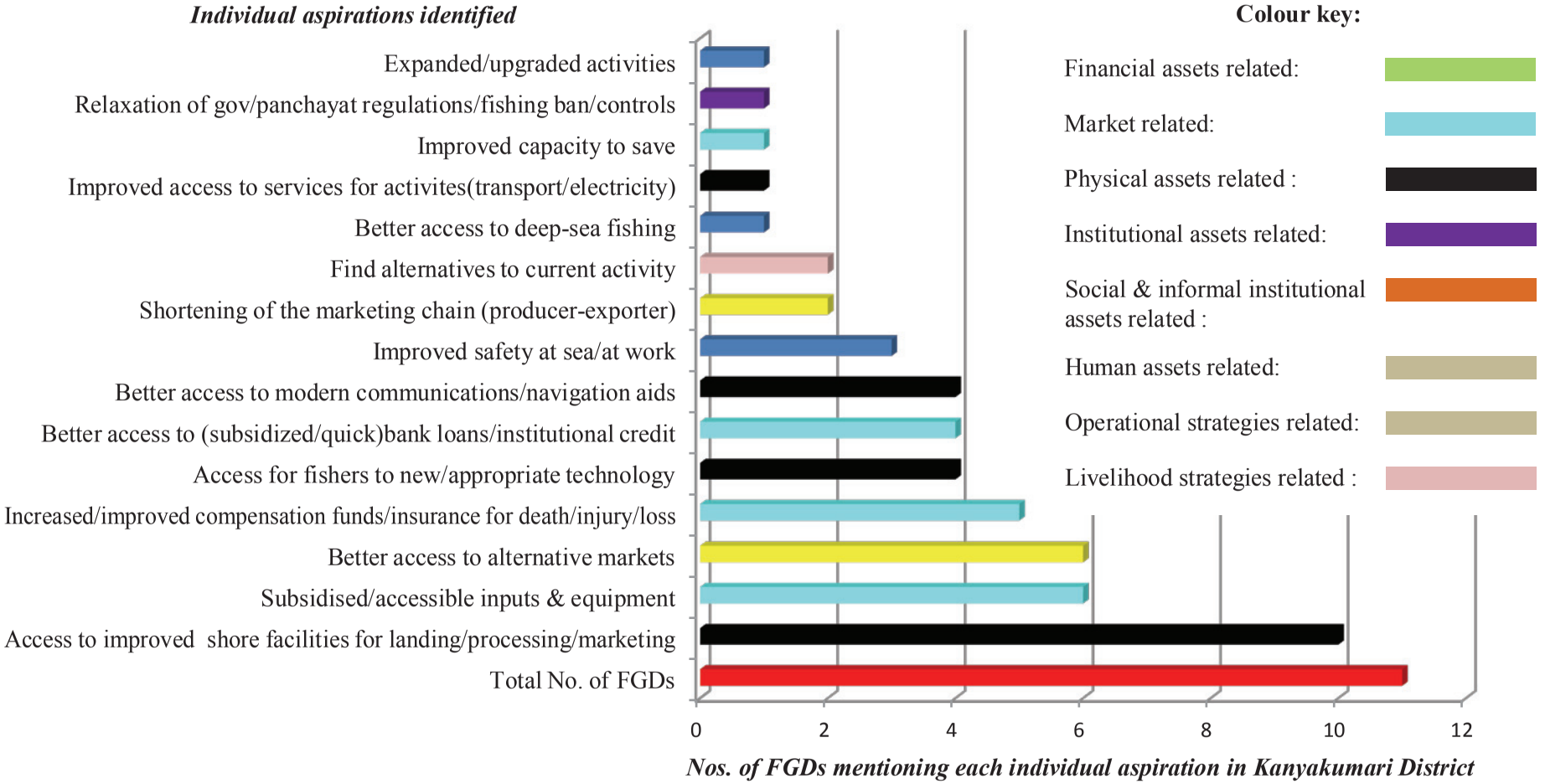


Figure 7.8.3 : Aspirations for children identified during FGDs in Kanyakumari District

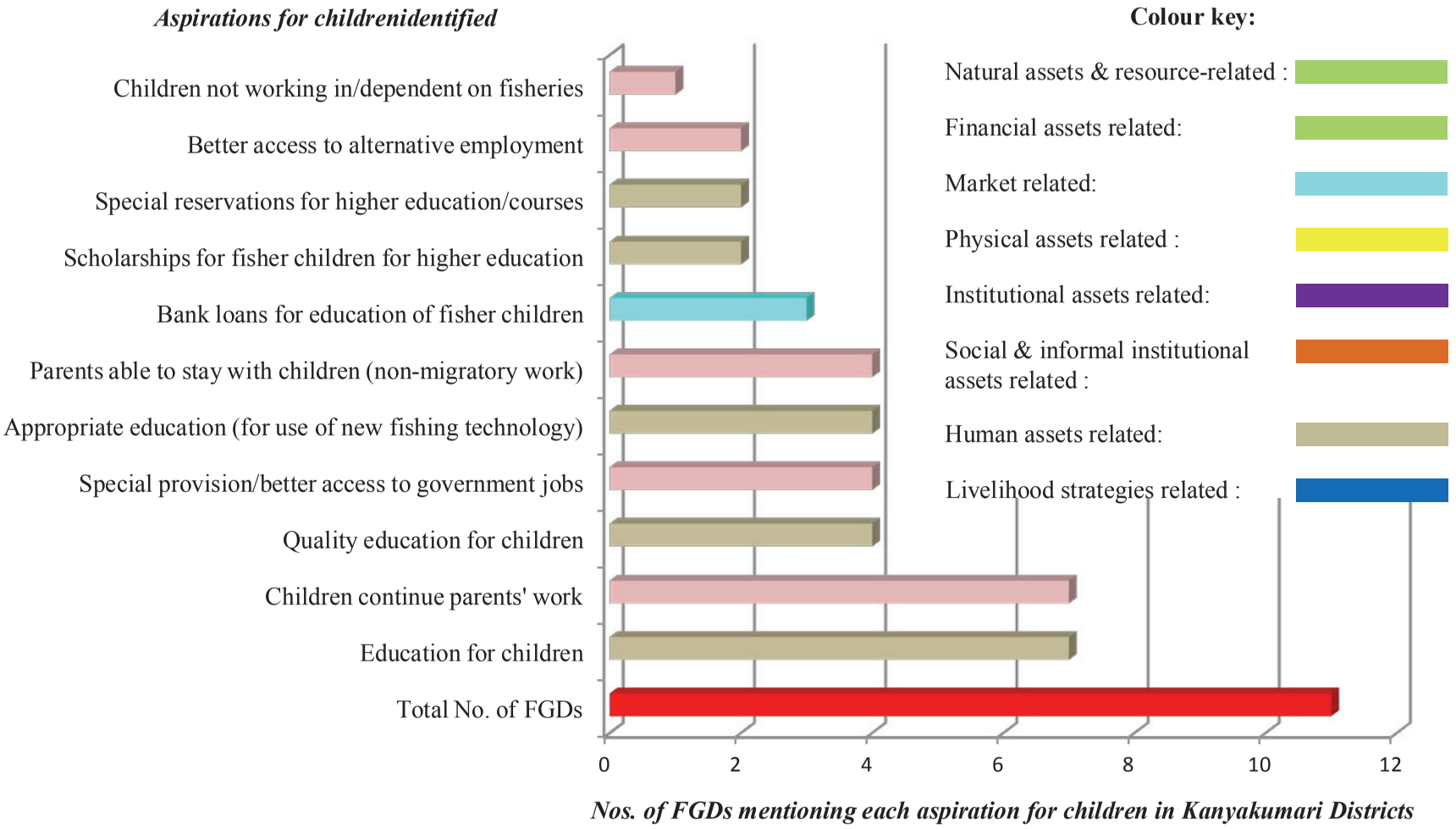
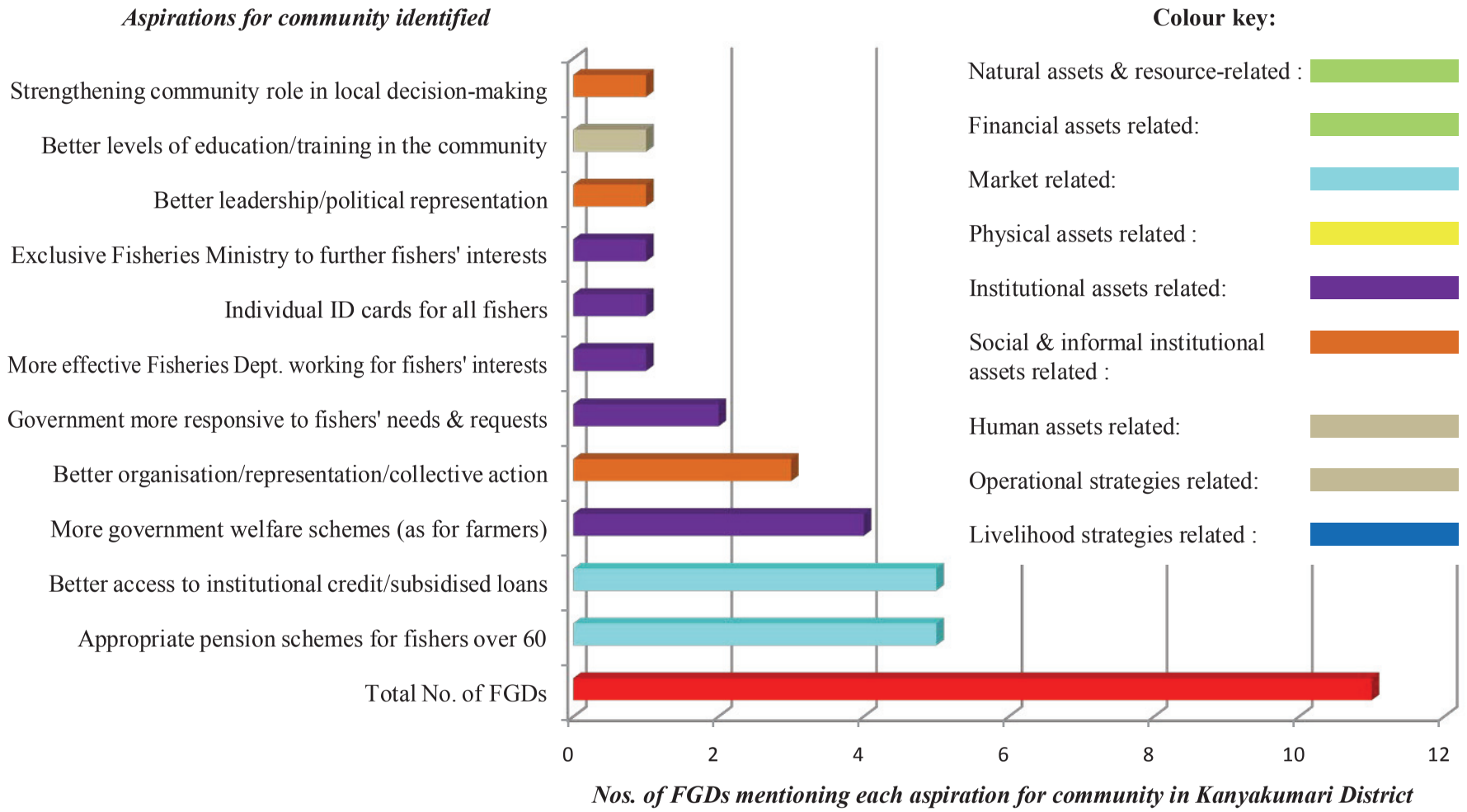


Figure 7.8.4 : Aspirations for their community identified during FGDs in Kanyakumari District



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